

PULP & PAPER

"The Cellulose Age"

EDITORIALS

From Mexico to Newfoundland

Perhaps it can now be stated as a simple fact—and without any boastfulness intended—that **PULP & PAPER** is a truly continental magazine. For **PULP & PAPER** not only covers the industry all the way from the Atlantic Coast to the Pacific Coast in both U. S. and Canada, but its "field reporting" now has been extended to the great island of Newfoundland.

And not without some difficulty, owing to a railroad strike which cut off the only possible overland contact to two big pulp and paper mill towns and caused them great hardship. But **PULP & PAPER** added Newfoundland to its orbit by unscheduled and special plane services, with a converted cow pasture for a landing field.

We hope our readers will find the reports from Newfoundland and the Maritime Provinces of Canada, in the last issue, in this issue and in future issues, of greater value and dependence because they are published as a result of actual first hand observations.

PULP & PAPER extended its coverage to Mexico early this year—touring a dozen mills, including several new ones, in that country which is rapidly making itself more self-sufficient in pulp and paper.

But editorial coverage of Newfoundland and Mexico and of mills in as far-removed points as Vancouver Island and Florida and Texas only partly tell the story of how thoroughly this magazine covers the North American industry. The really unique distinction is the fact that **PULP & PAPER** editors have visited a total of over 200 mills in this past year—in between, as well as in, those far away lands!

The importance of these visits are that articles presented here are written with this actual experience as background—for which there can be no substitute.

"Life With Father" in a Paper Mill

The appearance of the play "Life With Mother," the exciting successor to "Life With Father," has reminded a magazine writer of the narrow escape of the manuscript of the first book. This story has for its heroes the employees of Crocker-Burbank & Co. Ass'n Mills in Fitchburg, Mass.

Clarence Day had written the manuscript painfully, due to arthritis, and Alfred Knopf, anxious to rush it, sent the long-hand to the Pittman Press. Arriving there with other and bulkier material it was, apparently, confused with waste wrapping. There began a frantic search of waste paper jobbers and paper mills extending throughout New England. The printer suddenly recalled that he had sent a small shipment of waste to Crocker, Burbank. An alarm was sent out and Crocker, Burbank began to turn itself upside down in the interests of literature. We won't

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vouch for this detail—but it does make the story good—the script of "Life With Father" was found on the moving conveyor, just a few inches from the shredding machine.

It probably never would have been written again. And its salvation certainly created a use for thousands of tons of book paper and newsprint. But somehow we feel that "Life With Father" would have broken some teeth in the shredder, defied the chemicals of de-inking, and raised particular hell on the paper machine.

Gobbledydonk in Technical Papers

At a recent meeting at Poland Springs the dinner speaker dwelt on the absurdity of government pamphlets, in particular those directed to the American farmer—who, by and large, has a good deal of common sense and can understand plain English. He read some of the more excruciating paragraphs from perhaps a dozen issues of the Government Printing Office.

But, truth to tell, the burden of his talk struck closer to home than perhaps his listeners realized. Many scientific men, and not merely government pamphleteers, are in the way of developing a manner of narrative that is closely akin to gobbledegook. Running through a sampling of some recent technical papers, we read, for example, about "optimum dispersion of clays," which sounds swell, but means something much simpler than this sounds.

"Many contradicting opinions exist at the present time both in the theory and in the practice of papermaking" is a statement needless to say, and if such opinions do exist, when else could it be but "at the present time?"

And consider this: "There is a well established traditional basis for qualitatively separating the reflectance responsible for color from that responsible for gloss." If the basis is "traditional" it goes without saying that it is "well established." And in the next sentence the author tells what the other sentence means, only in plain English.

There are some papers which could be much simpler and much shorter, and would result in many more readers with additional benefit to the industry.

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SWISS INDUSTRY AT PEAK

Gets a New Puseyjones Machine

Switzerland has the distinction of being one nation in Europe where the mills were undamaged by war and have kept their equipment operating and in good shape, the manager of one of the important Swiss mills told **PULP & PAPER** while on a tour coast-to-coast of U. S. mills.

He is Siegfried Aeschbacher, mill manager of the Utzenstorf Paper Mill, near Berne, Switzerland, and accompanying him was his wife, who remained with friends in New York after they visited the Buffalo TAPPI meeting, and Chicago, while he went on west.

Mr. Aeschbacher said there are 16 mills in Switzerland, one of which makes sulfite pulp at the town of Attisholz, and it was one of the first in Europe to make Mitchell pulp (it was known as "Sieber" pulp for the founder, grandfather of Mr. Aeschbacher. Ten Swiss mills make groundwood. The other five purchase their pulp from sulfite mills in Europe, including the one in Switzerland.

His mill is closely connected with the Attisholz sulfite mill and his mill also makes groundwood and newsprint and ordinary printing paper.

A new 138-inch Pusey & Jones paper machine is being built for the Utzenstorf Paper Mill and the machine will be shipped from Wilmington, Del., after Dec. 1. The machine has a Beloit dual press.

This machine replaces one of two old machines at the Swiss mill and the one it replaces is now for sale. As a result of this installation, the capacity of the mill will be increased from 18,000 to 35,000 tons per year without any appreciable enlargement of the mill.

Outside of Switzerland, Mr. Aeschbacher said, there are still many idle mills because one section of the mill—the steam plant in one, wood room in another, etc.—was destroyed in the war. He reported that a U. S.-made paper machine is also being delivered to a French mill.

Three Lang Brothers— Arkansas to Newfoundland

There are now Lang brothers in three widely separated regions of the continent with Lloyd "Curly" Lang, on leave from the Kimberly-Clark organization, serving as a development engineer with the Crossett Industries at Crossett, Ark., helping that company to further develop its diversified wood utilization program. He is working on new cooking processes for hardwoods.

Lyle Lang, second eldest brother, is sulfite superintendent at Bowaters' Newfoundland Pulp & Paper Mills, Corner Brook, Nfd., where he operates one of the model sulfite operations in the industry. Youngest of the trio, Stuart Lang, is assistant sulfite superintendent, Marinette Paper Co., Marinette, Wis. The trio hope to be together Christmas at Marinette. Lloyd Lang worked up from pulp tester to sulfite engineer with K-C.



SIEGFRIED AESCHBACHER (left), Swiss Mill Manager, on tour of U. S. mills. He is Manager of Utzenstorf Paper Mill and is grandson of founder of Switzerland's only sulfite mill, first in Europe to make Mitchell pulp in the past century. The Utzenstorf mill will install new Pusey & Jones machine next year.

GERALD MURPHY (right), recently appointed the new General Traffic Manager at Bowater's Newfoundland Pulp and Paper Mills, Corner Brook, Newfoundland. He is a veteran in Bowater's service and widely known in newsprint and sulfite field and was for years in steamship traffic work in New York.

Southern Meeting

Southern Pulpwood Conservation Association will hold its annual meeting in Atlanta, Ga., on Wednesday, Feb. 9. Headquarters will be at the Atlanta-Biltmore Hotel, with those participating scheduled to register on the 8th, according to Henry J. Malsberger, forester-general manager.

Industry-Wide Bargaining In British Paper Industry

Almost 200 paper mills—virtually 100% of the industry—now join in industry-wide labor negotiations each year in Britain, Arthur Baker, of New Barn, Longfield, Kent, England, director of Bowater's Paper Corp., central holding company for the Bowater's mill, told **PULP & PAPER** on a recent visit to Newfoundland.

Mr. Baker, with two other directors of Bowater's, was a visitor at the Corner Brook, Newfoundland, mill of that company. Others were Earl C. Duffin, director of sales for Bowater's, and Tom Killin, general mill superintendent of Bowater-Lloyd Co., the Bowater mill group in London. Tom is brother of Andrew Killin, general superintendent at the Newfoundland mill.

In the advancement of labor relations in the British paper industry, Mr. Baker has been a pioneer. For years he has served as the president of the Employers' Federation, which deals with all labor matters for the member mills. There are two principal labor unions in the British industry, but there are also a number of smaller craft unions.

Mr. Baker also was founder of the technical association in Britain which corresponds to TAPPI.

Canadian Paper Mill

The Financial Post of Ottawa, states that J. Dickinson and Company, one of the largest fine-paper manufacturers in Britain, will probably establish a fine paper mill in Canada. The approval of the establishment of U. K. branch plants in Canada is being made under the 1942 interest-free loan arrangement worked out by the Canadian government in Dec. 1946.

COMING INDUSTRY MEETINGS

Supts. Assoc., Miami Valley Div.— Anthony Wayne Hotel, Hamilton, Ohio	Dec. 2
Kalamazoo Valley TAPPI—Colum- bia Hotel, Kalamazoo	Dec. 2
Supt's. Ass'n., Pacific Coast Div.— New Washington Hotel, Seattle, Wn.	Dec. 3-4
Western Forestry Conservation Assoc.—Empress Hotel, Victoria, B. C.	Dec. 9-11
Supts. Assoc., Michigan Div.—Harris Hotel, Kalamazoo.....	Dec. 16
Empire State TAPPI—Queensberry Hotel Glens Falls, N. Y.....	Dec. 17
Chicago TAPPI—Bar Assoc., Fields Bldg., Chicago	Dec. 20
National Materials Handling Show— Convention Hall, Philadelphia.....	Jan. 4-10, 1949
Pacific Coast TAPPI— Seattle, Wash.....	Jan. 11, 1949
Canadian Pulp & Paper Assoc.—Mt. Royal Hotel, Montreal.....	Jan. 26-28, 1949
Southern Pulpwood Conservation Assoc.—Atlanta-Biltmore Hotel, Atlanta, Ga.....	Feb. 9, 1949
American Paper & Pulp Assn.— Waldorf-Astoria, New York.....	Feb. 20-24, 1949
National TAPPI Convention— Commodore Hotel, New York.....	Feb. 21-24, 1949
National TAPPI Coating Conven- tion—Grand Rapids, Mich.....	Apr. 26-28, 1949
Packaging Machinery Institute (Spring Meeting)—Hotel Dennis, Atlantic City, N. J.	May 9, 1949
National Packaging Show—Public Auditorium, Atlantic City.....	May 10-13, 1949
Supts. Assoc. (National Convention) —Hotel Haddon Hall, Atlantic City, N. J.	June 15-17, 1949
National TAPPI Fall Meeting— Multnomah Hotel, Portland, Ore....	Sept. 12-16, 1949
Paper Industry Salesmen— Midston House, New York City— Every Monday, 12 noon to 2 p.m.	
Allied Industries' Luncheon Club— Second Monday of month, 12 noon, Commodore Hotel, New York.	

ACROSS CANADA AND NEWFOUNDLAND

Machines and Mills

It's 3,640 miles from the Atlantic to the Pacific across Canada if you clickety-clack over two winding steel bands that provide a track for rail travel from one waterside to the other. In order to accumulate a record of new important developments in the Canadian and Newfoundland industries, **PULP & PAPER** not only has covered this route but also traveled to the two big outlying islands, Newfoundland and Vancouver Island. Side-trips by airplane and buses adding well over a thousand miles to these travels were necessary to visit about a score of Canadian pulp and paper mills.

Before going into detail about these trips, it seems a point worth mentioning that nowhere on this continent is there a more liberal and genuine sharing of operating information among mills than in the Canadian and Newfoundland industries. This is especially true among the

newsprint mills all the way from Grand Falls and Corner Brook in Newfoundland to Powell River, who despite their competitive character, freely exchange accurate data on the speeds of machines, and how these speeds have been achieved, and on chemical and operating problems. The same spirit of comaraderie is already very evident among the half dozen new kraft mills north of the international border. It's no exaggeration to say this is quite a shock to some visiting U. S. operators, who are not so accustomed to such goings-on.

TWO NEW MACHINES SHOOT FOR NEW RECORDS

There's something thrilling about the preparation for the start-up, and the start-up itself, of a modern newsprint ma-

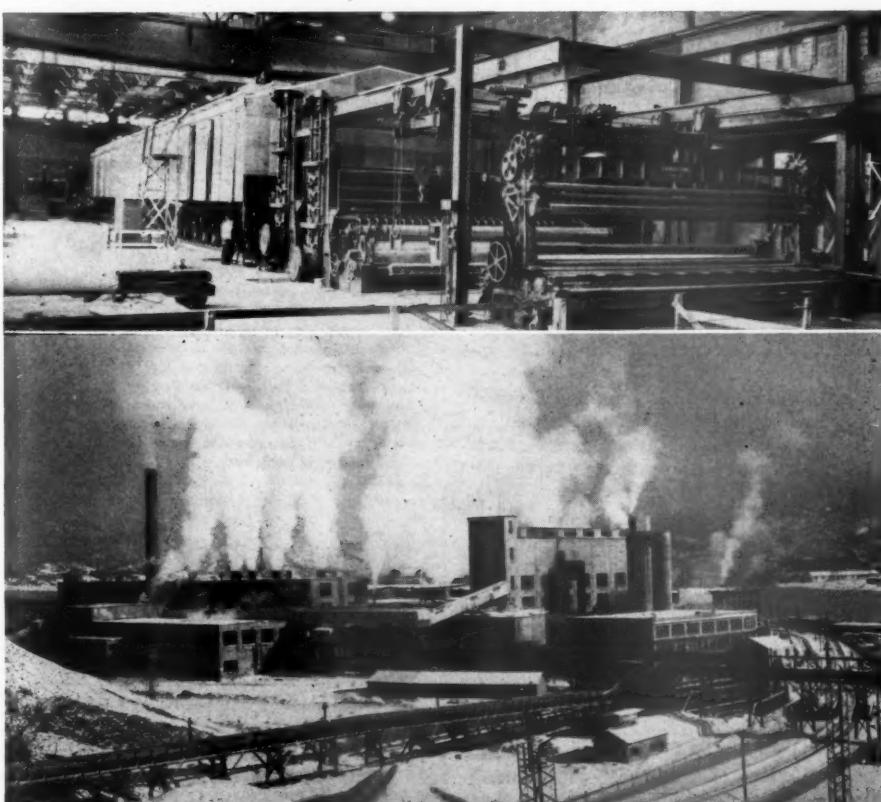
chine because where newsprint is made today, speed is of the essence. It's a special thrill when it's a machine which seems destined to set records—it has something about it that's like a major athletic event.

But when there's two machines—both of them shooting for speed records never witnessed before—well, the Rose Bowl and the Olympics and all that minor league stuff takes a back seat as far as papermakers are concerned.

No. 8 at Powell River's mill in British Columbia and No. 7 at Bowater's mill at Corner Brook, Newfoundland, are both shooting for new records. **PULP & PAPER** editors have seen them both, in fact the journey to Corner Brook by special plane, in spite of a railroad strike that cut off the mill from all overland travel, was something of an event. As a matter of fact, the Bowater's company called off all ceremonies and festivities on account of the strike, and just went ahead and started its machine rolling with only a **PULP & PAPER** editor and a few directors from London on hand to see the preliminaries. Maybe that's the best way to start up a machine after all! We can hear a lot of papermakers saying "amen" to that.

The 284-inch wide Bowater's machine, after preliminary tests, was to make its first reel at 1,300 feet per minute. Only last September, the 226-inch wide Powell River machine started up at 1,200 ft., the fastest any news machine ever started up in history. Back in 1937, the Quebec North Shore Paper Co. twin machines started up at 1,000 ft.

Latest word as this issue went to press is the new No. 8 machine at Powell River Co., Powell River, B. C., has been edged upward to a running of 1,540 feet per minute.



The attractive brick Quebec North Shore mill, owned by the Chicago Tribune and New York News, where George James Lane has been manager since the startup, still holds the speed records and probably will continue to do so for quite a while. Speed isn't only a question of machinery, or even of supply of paper stock (which is always a factor, too), but most of all it's a question of operating experience and skill.

It is certainly a compliment to the organization built up by Jim Lane at Baie Comeau that at both Powell River and at Bowater's, former Baie Comeau men are in responsible positions. A Baie Comeau alumnus is Russell M. Cooper, resident manager at Powell River, and newsprint men all across Canada were singing

his praises last month for the quick, smooth startup he achieved.

At the big Bowaters' operations, general manager is H. M. S. Lewin, mill manager is Gerald Penney, and assistant mill manager is Victor Sutton. Directly overseeing startup of the new machine is Andrew Killin, a native of "Zomerzet," England, who was superintendent at Baie Comeau for four years, and is now Bowater's general superintendent. Assistant superintendent in charge of No. 7 machine is Donald A. Lochyer, who was at Baie Comeau from '37 to '46.

The two 262-inch Baie Comeau machines (all production goes to the New York Daily News) have run 1,730 ft. per min., world's record for newsprint. They have averaged 1,650. The record output for No. 1 was 261 tons on Sept. 18 this year and that month it averaged 243 per day. The record for No. 2 was 256 last June 12 and it averaged 246 that month.

Some day both Bowater's No. 7 and Powell River's No. 8 probably will exceed Baie Comeau's records but it will take time. In the past month, the 304-inch machine at Great Lakes Paper Co., still the widest on news on the continent, reached a reported speed of 1,400 ft. per min.

PULP & PAPER saw the 50, five-ft. diameter dryers of the new Bowater's machine whirling, without paper on them, at the "never-before-seen" speed of 2,020 ft. per min. The big Cameron No. 20 rewinder is designed for 4,000 ft. per minute, has regenerative braking, constant tension incorporated into the winder, and is as completely automatic as possible.

But the present headbox and slice are designed for top speed of 1,750 ft. per min. and it seems likely the machine's ultimate speed may be close to 1,800 ft.

An 1800-hp. synchronous motor with Harland drive and a 1,200-kw. d.c. generator hooked onto it, serves this machine. A 450-hp. couch motor is the biggest ever made for a paper machine. Harland Equilock speed control holds fixed speeds regardless of temperature or load changes.

There are two fan pumps, instead of the conventional one. One feeds the five Bird screens, which are removed from conventional headbox position and set on the floor behind the headbox, their total width being much wider than the machine. Stock goes into a screen collecting box and then down into the second fan pump which sends it up to the vertical flow spreader. The engineering objective here was to reduce volume in the headbox to a minimum while still getting good flow on the wire. The result is a stream-lined wier-effect, and as speed is increased, the wier must be raised.

A 54-inch double couch, biggest ever made; two calender stacks, instead of one; two presses instead of three; a high speed hoist with hooks for both reel of paper and reel bar, and aluminum Ross hood with sliding panels, are other features of this machine.

The very week that **PULP & PAPER** arrived at Corner Brook, that mill set a new day's record of 756 tons of newsprint, and 201 tons of export sulfite and export



SIR ERIC BOWATER (left), President of Bowater's Pulp & Paper Mills, Ltd., with mills in England and Newfoundland, and now looking to British Columbia for possible expansion. His grandfather founded the industrial organization which Sir Eric now heads at 53. He was World War I veteran. Spent several weeks in Newfoundland this year. H. M. S. LEWIN (right), General Mgr. and a Director of Bowater's Newfoundland Pulp & Paper Mills in Corner Brook, Nfld., since 1928. This is from a sketch done of him by Newfoundland artist. He was officer in His Majesty's Navy.

groundwood production. This was before the new machine, which should make 250 tons at 1500 ft., was in operation.

So, it seems assured now that Bowater's will become the first mill in the world to produce more than 1,000 tons of newsprint in a single 24-hour day.

The present record for total newsprint production at one mill is presently held by the Canadian International Paper Co.'s Three Rivers, Que., mill. Under the direction of Fred Allen, manager of manufacturing, Newsprint Division, Canadian I.P.; J. B. West, the local manager, and his staff, this big mill has reestablished a record of 940 tons of newsprint in one day and averaged 910 tons a day for a month. This was done on eight machines.

NEW MILLS IN WEST

In these columns we have already reported in detail on completion of the new Bloedel, Stewart & Welch 165-ton kraft mill at Port Alberni (exclusive illustrated article in Feb., 1948, issue), and on engineering progress for two more big mills on Vancouver Island. A pulp and newsprint mill is to be built at Duncan Bay by Canadian Western Lumber Co., with Crown-Zellerbach's assistance and engineering. The MacMillan bleached kraft pulp mill at Nanaimo is shaping up on drawing boards as similar to the Port Alberni mill, also engineered by the Howard A. Simons firm.

And Bowater's with big mills in London and Newfoundland, is also interested in Vancouver Island, Sir Eric Bowater said. And Bowater's representatives have inspected timber and possible sites on Vancouver Island.

Now it is understood that all contracts will actually be signed and sealed—several already are consummated—before actual work starts on the Statler, Hurter & Co.-engineered Celanese dissolving pulp mill at Prince Rupert, B. C., where ground already is prepared. Engineering is going forward for another 300-ton dissolving pulp mill about 100 miles farther north, at Ward's Cove, Alaska, by Puget Sound Pulp & Timber Co. engineers, with American Viscose as principal financial interest.

KIMBERLY-CLARK MILL RUNS FIRST PULP

A fourth new kraft mill in Ontario, the LongLac Pulp & Paper Co., at Terrace, was making its first test runs of pulp when visited by **PULP & PAPER** this fall. Power has been cut in from the new Ontario Hydro Commission power plant and official startup of this 200-ton bleached kraft mill was set for late November. This was the second time in a year that **PULP & PAPER** has visited Terrace. Here is a standard kraft process, with a few innovations in arrangement and construction materials. All production goes to Kimberly-Clark, the owners, and none of the pulp will be for sale. Don Porter, mill manager; Joe Wig, new plant engineer, and other operating men from Kimberly-Clark organization have moved in to take over from the construction executives and 1,800 construction workers were leaving behind a permanent community of only 400, living in what is one of the outstanding model mill towns of the continent.

Ontario's other new kraft mills—Brompton's at Red Rock, 75 miles west of Terrace; Marathon's, 50 miles east, and KVP, Ltd., considerably farther to the southeast, were found in steady production with the KVP paper machines at peak output.

PULP & PAPER saw steel work already up for the Fraser Companies' new kraft pulp mill at Newcastle, 250 miles east of the big mills at Edmundston and Madawaska, and which will serve them with pulp. Designed for 120 tons, its pulp will go through the new completed 6-stage bleach plant at Edmundston on the New Brunswick-Maine border.

Frank O. White, the distinguished Maine-born Fraser chief engineer, was responsible for these projects, and Ralph Murchie, formerly assistant sulfite superintendent at Edmundston, already was in residence at Newcastle as the new manager there. Eugene De Luca, from the Restigouche mill, is his superintendent, and Nairn McCaffrey, a White protege, is resident engineer.

Engineering is proceeding for the big-

HERE'S THE BEST POSSIBLE EVIDENCE that **PULP & PAPER** magazine has really "gone all out" in adding Newfoundland—soon to be a part of Canada—to its orbit as the magazine of all the pulp and paper industries of North America. This is a membership card in the famous Blomidon Club in the equally famous Glynmill Inn at Corner Brook, sponsored and loyally supported by officials of the Bowater's mill there. If you read "Blomidon" out loud—and euphoniously (with accent on last syllable)—you'll appreciate the gusty character of this exclusive organization.

At the request of

Mr. L. Long
The President and Members of the
BLOMIDON CLUB
extend to

Mr. A. Wilson
the privileges of the Club subject to the
conditions stated on the back hereof

CORNER BROOK,
Newfoundland,
Oct. 17th 1948 G. T. Lewis
Secretary

Newfoundland—It's a Great Island

The orbit of PULP & PAPER'S "field" coverage of this industry has now been extended to the far east Maritime Provinces of Canada and even to Newfoundland.

The trip to the 40,200 sq. mi. island far out in the North Atlantic would have been a unique undertaking for any industrial publication of any industry at any time. It was even more so for PULP & PAPER because of a railroad strike tying up all transportation on the island and even stopping the railway-owned ship service from the mainland port of Sidney, N. S. There are no motor roads from ports to entry to the Newfoundland mill towns.

Undaunted by these impediments, which even turned back Sir Eric Bowater himself (he sailed home to England on the Queen Mary from New York, giving up his plan to see the new Bowater machine at Corner Brook, Nfd., potentially the fastest news machine in the world, start up), PULP & PAPER achieved its objective via airplane.

An unscheduled non-stop flight was made from Moncton, N. B., to Gander, Nfd. From there, PULP & PAPER's editor was the lone passenger in a chartered special flight in a Lockheed all the way back across the breadth of Newfoundland again to Corner Brook, landing on what had been a cow pasture just a few days before—a one-way strip between two hills at Little Rapids, just a few miles from the Corner Brook mill. The cows themselves—shoved back into a smaller field—did a wild dance when the plane bounced down on the right field, and presumably there was not much milk for the farmer that night.

Five days later, PULP & PAPER's editor flew back to Gander in the same special plane and a minute after the plane dropped down to that great air-cross-roads of the world, an official came out to announce that that was the last flight to or from Corner Brook. The Newfoundland government decided to condemn any further use of the Little Rapids air strip.

But Air Service There Must Be

But we don't mean to write lightly of Newfoundland's woes and of those of the great pulp and paper industry of that island.

The Little Rapids airstrip may be condemned, but some day the Corner Brook and Grand Rapids paper mills must—and will—have regular air service. The railroad strike has taught this lesson to both the Corner Brook mill and to the big Anglo-Newfoundland mills at Grand Falls, owned by the London Daily Mail. This mill was even more at the economic mercy of the railroad because it is inland. These two companies own or have cutting rights to most of the timber in Newfoundland and thousands of mill workers, of business men, of woods workers are dependent on the companies for their livelihood. They form a big portion of Newfoundland's 350,000 population.

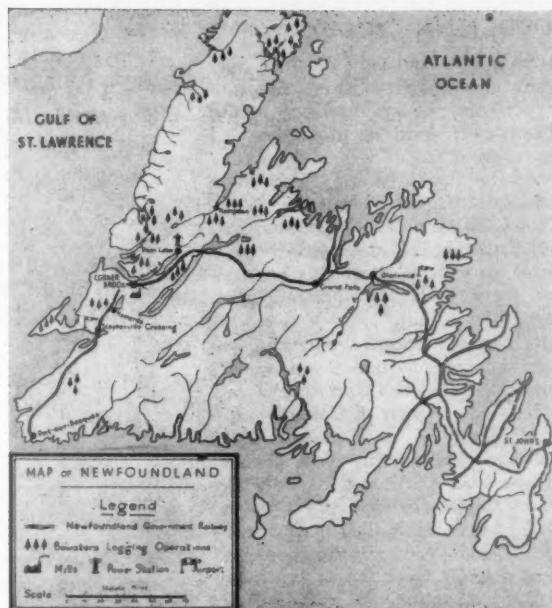
A flying boat service from Nova Scotia to Corner Brook's harbor was a possibility last month. The great airport of the U. S. Army at nearby Stephenville, connected by a short highway with Corner Brook, could also be extended or apportion space for commercial flights. It is un-economic for commercial air service now operating from the west to make all flights right past Corner Brook and Grand Falls, which are big important centers, en route to Gander, without stopping.

Gander—A Great Crossroads

Gander itself would be an excellent base for regular flights to the paper mills. Comparatively few people in U. S. and Canada realize what a great airport this is. When PULP & PAPER landed there, there were no less than ten big trans-Atlantic planes on the paved runways, crowding lighter planes off on the dirt surfaces. About 40 ocean-crossing planes a day drop down here—an average of 1,100 planes a month, carrying 40,000 to 50,000 people of all nationalities. In a few winter months this average may drop off to about 800 planes a month, because with stronger tail winds and lighter loads, the eastbound planes often fly right by Gander without stopping. When bad weather sets in the eight air-lines have quite a problem keeping grounded passengers happy—sometimes as many as 500-600.

(A British Overseas Airways official told of three days of parties that had to be planned for 575 marooned passengers on one occasion. Airlines joined in sponsoring a dance with free drinks).

The strike had only been on a few weeks in Newfoundland, when communities like Gander and Grand Falls—both being inland—faced actually a critical shortage of food and fuel supplies. Gas shortage threatened the plane services. Even at Corner Brook, where big freight ships frequently call, and four were in port when PULP & PAPER was there, the stock of merchandise was running low. Bowater's own big



Gander Airport is east of Glenwood on the lake shown.

liner, the S.S. Corner Brook, which carries out 7,000 tons of newsprint each voyage, was undergoing repairs in Wilmington, Del. Incidentally, Bowater's, which lost five ships to submarines during the war, is now building a sister ship for the Corner Brooks.

Resort to Dog Teams

When this was written, before any news of a strike settlement even seemed likely, the Newfoundlanders were expecting they would have to resort to dog teams to keep well and alive.

Because of the railroad strike, PULP & PAPER's editor actually flew four times across the breadth of Newfoundland. A quick 4-hour hop to Boston in a big Constellation (it had been to Iceland fighting bad weather on a flight from Frankfort) provided the final passage over Newfoundland.

Water, Water Everywhere

There must be literally thousands of lakes and ponds in Newfoundland as these puddles of water dotted the land below everywhere. The rest of it is pretty much wilderness. Balsam and spruce, and some pine, are thick in every direction to a plane observer. This is mostly small wood, averaging 6 ft. in diameter waist high, and not tall, but there is plenty of it for a perpetual supply for the two mills.

There are no mountains in Newfoundland except a low range on a long arm of land extending north from Corner Brook. Most hills are not over 2,000 or 3,000 ft. high. The coast line is 6,000 miles long, with many little fishermen's settlements. The long arm of land to the north is the eastern border of the Gulf of St. Lawrence and at its extremity is only nine miles across the Strait of Belle Isle from Labrador.

It freezes over in winter and this way the moose, bear, caribou and even fox probably came to Newfoundland. Strangely, there have never been any deer nor any wildcats of any description on the island.

As we have already reported, Newfoundland is due to become a part of Canada come spring. A spirited and close election decided this issue recently. But never let a Newfoundland hear you say they are going to become "the tenth province." To him, they will always be first. Now they are suffering greatly because of the high outside prices all around them and because of the blow dealt by the railroad strike, but just drop in on them sometime and you will learn they are remarkably self-reliant people, proud of their long history of independence.

gest new project in the east—the projected 500-ton news mill and 500-ton kraft pulp mill at Lepreau, in southwest New Brunswick, for Maritime Pulp & Paper Mills, Frederick Bagley, general manager. Many improvements were being made at Bathurst, St. John, Mersey, Dalhousie and Chandler in the Maritime Provinces with a new small board mill going up at Hantsport.

New or enlarged groundwood mills at New Westminster, B. C.; Iriquois Falls, Ont.; Dalhousie, N. B., and Three Rivers, Que. (International); Murray Bay, Que., and Corner Brook, Nfd., and new bleach plants, in addition to those already mentioned, at Gatineau, Hull, and LaTuque, Que. (the latter two to be completed next year) are outstanding among improve-

ments in Canadian mills. Additional refining, screening and washing equipment is found in nearly all mills, adding to capacities or else improving pulp and paper grades. Waterous grinders are in all the new groundwood installations. These are different types of Waterous' grinders and probably an outstanding advancement for the industry is the highly effi-

cient super-Waterous hydraulic magazine upright type grinders such as the new ones seen at Three Rivers. Important, too, are Waterous horizontal type at Murray Bay.

BY-PRODUCTS IN CANADA

Among the most interesting developments to be seen today in the Canadian pulp and paper industry is the development of by-product industries.

Turpentine and tall oil is a definite possibility for the future at all of the four new Ontario kraft mills—the new Kimberly-Clark mill as well as Marathon, Red Rock and Espanola. No one could predict today what may develop in this connection, but these mills are founded upon large use of jack pine.

But the realities might be considered even more interesting than the possibilities. For instance, at the vast intertwined wood utilization projects of Canadian International Paper Co. at Gatineau, Que., where newsprint, dissolving pulp, Masonite, plywood and fiberboard already get dollar value out of almost every sliver of wood, a new ethyl alcohol plant was nearly ready to start producing when visited by **PULP & PAPER**.

This plant is owned by Commercial Alcohols, Ltd., of Montreal, and will buy sulfite mill effluent and steam from International. It is by far the largest waste liquor alcohol plant in the world and goes several stages in refinement of alcohol beyond the similar process at Puget Sound Pulp & Timber Co. in Bellingham, Wash. It is a similar plant in process to the wartime-built plant in Bellingham, which until now has been the biggest.

Any discussion of by-products in Canada could not omit mention of the work done at the Howard Smith Paper Mills under leadership of George Tomlinson of Montreal, who for a quarter of a century has carried out some of the most notable practical experiments in the industry (and probably more interesting ones than any other man), and his son, Dr. G. H. Tomlinson, director of research at the Cornwall, Ont., mill.

PULP & PAPER visited the Cornwall mill where (and this will be no surprise to any industry man who has been there) several new projects are going on at once, and also the new Arborite at La Salle, Quebec, just a few miles west of Montreal.

Arborite is a new and very superior lignin Melamine plastic product suitable for furniture, indoor walls, electric paneling, etc. It is much better than most similar plastics previously made in the industry and is produced by presses in many colors, attractive, hard and shiny surfaces. Don Abbott is manager at La Salle, where this new industry has given employment to 150 and finds a new use for formerly wasted lignin.

At Cornwall we saw lignin extracted from the black liquor from soda cooks, evaporated and precipitated in the new additions there. All this will be more fully described in a later article. At present powder is bagged and sent to the Windsor mills of the Howard Smith organization where lignin phenolic paper is

made and then sent to the new Arborite plant at La Salle.

Some Tomlinite lignin powder is shipped to England. Among other operations seen at Cornwall was the vanillin plant, where this product of sulfite liquor supplies most of the cooking vanilla for all of Canada, with some left over for the U. S. and England.

Bowater's Mills in England Get Wood and Pulp

Bowater's, British newsprint manufacturers, have concluded a deal through the Canadian government and British Board of Trade whereby some Canadian pulpwood as well as sulfite pulp will be imported by the Bowater's mills in England. Twenty-five thousand cords of pulpwood and 4,500 tons of sulfite pulp are included in the first contract. Bowater's newsprint will be exported to Australia.

A spokesman for Bowater's stated: "When converted into paper in the United Kingdom this raw material will provide nearly three tons of finished newsprint for the same dollar expenditure required for one ton supplied from dollar sources."

St. Croix Paper Co. Sold

Stock of the St. Croix Paper Co., Woodland, Me., valued at \$500,000, has been sold to the New York Daily News. This plant has three machines and capacity to run 270 tons per day of newsprint. The Daily News acquires 2,500 shares at \$200 a share.

John L. Hobson is president and treasurer of St. Croix, K. P. Osborn, executive vice president, and H. L. Hayes, general manager.

PEJEPSKOT PAPER CO., Brunswick, Me., has installed new Pusey & Jones drum reels and new Cameron winders on its No. 7 and No. 8 machines.

Marvin C. Jones, director of purchas-

MISS RUTH DAWES (left), Secretary at the Appleton (Wis.) Woolen Mills, is counted a good friend by scores of people in Wisconsin paper industry and, for that matter, many from more distant mills. When this picture was snapped by a visiting **PULP & PAPER** editor, neither he nor Miss Dawes thought it would be published. But hearing about the time she is devoting nowadays to serving as Advisor to Girls' Clubs in Appleton, Neenah and Menasha, seems to be a good excuse for running her picture, so here it is!

SEÑOR PEDRO MARTIN, of Apartado Postal (P.O. Box No.) 544 Mexico City, who has made U. S. paper industry visitors most welcome in that country capital, is representative in that country for Bulkley, Dunton Cellulose Exports, Inc., Lockport Felt Co. and Morden Machines Co. Sr. Martin comes from Irish forebears—Martins and Wilsons—but he is a Mexican citizen, as was his father. His sons attend St. Andrews' school in Canada.



Marvin C. Jones to Head New Weyerhaeuser Mill

MARVIN C. JONES, who has been appointed Manager of the new Springfield, Ore., kraft pulp and container board mill being built by Weyerhaeuser Timber Co.

HOWARD MORGAN, Manager of the Pulp Division of Weyerhaeuser Timber Co., announced Mr. Jones' appointment.



ing and engineering for the past 14 years at Michigan Carton Co., Battle Creek, Mich., one of the leading board mills in the country, has been appointed mill manager of the new kraft pulp and container board mill now being built by the Weyerhaeuser Timber Co. at Springfield, Ore.

Mr. Jones made his first visit to the Pacific Coast since before the war during November.

A graduate in chemical engineering from the University of Michigan in 1925, Mr. Jones was with Michigan Carton for 22 years in all, starting as chief chemist in 1927. He became director of purchasing and engineering in 1934. He was also a director of the company.

Mr. Jones played an important role in planning and in construction of a new 250-ton board mill which started up operations at Michigan Carton last June. One of the largest and most outstanding board machines ever built is the nucleus of this addition.

At Springfield, located in Lane County, where there are "more sawmills than any other county in America," he will be in charge of a mill which marks an important advancement in closer wood utilization in the west, using wood "leftovers" of other wood manufacturing plants.

National Packaging Show Set for May 10-13

The American Management Association has announced its eighteenth annual National Packaging Exposition, largest in the history of the event, will be held May 10-13, in the Public Auditorium at Atlantic City, N. J. More than 200 exhibitors will utilize 110,000 square feet to display developments in packaging, packing and shipping machinery, equipment, materials, design and services which are used in the manufacture and distribution of virtually every product in the nation's commerce.

The annual four-day AMA Conference on Packaging, Packing and Shipping will also be held in conjunction with the exposition. Here more than a thousand packaging executives, engineers and technical experts will discuss management aspects of materials, methods, procedures and merchandising.

Lawrence A. Appley, AMA president, said arrangements for the Packaging Exposition are being made by the Exposition Exhibitors advisory committee of which J. M. Cowan, the Dobeckmun Co., Cleveland, is chairman.

Pulp Market and ECA

Effect of European Aid and Defense

Recent weeks have seen important changes in the pulp situation as well as in the relation of supply and demand in some phases of the paper industry. Parallel with these developments, great interest has attached to the operations of ECA as affecting the pulp and paper industry. In an effort to bring to readers an objective account of the current situation, **PULP & PAPER** has interviewed a number of competent observers in the field, including mill executives, association managers, pulp and paper factors, and members of the Pulp and Paper Branch, Industry Division, ECA.

Important in pulp developments has been the reduction of Swedish and Finnish pulp prices by approximately \$20 per ton for the final quarter. Reasons for the action were plain. There were heavy third-quarter delivery cancellations by U. S. mills faced with increased costs and some curtailment of demand; there was a continuing pressure for American dollars abroad; and there was also a desire on the part of Finland and Sweden to retain a sizable share of the U. S. market for the future. Thus far the price cuts have not resulted in any substantial increase in exports to the U. S. This may mean a further narrowing of the spread between North American and European prices, according to some informed sources.

These sources point out that there is no such thing as isolation with respect to U. S. market pulp supply, and that any study of the domestic situation must be from the world point of view—that pulp is an international commodity.

There seems no question now that the industry has passed from the absolute shortages of the war years and through a period of approximate balance of supply and requirements. The current situation is one wherein supply of both total pulp and market exceeds consumption, permitting healthy rebuilding of inventories in many segments of the industry. It is now said that inventories of all major grades of wood pulp currently exceed "a practical working minimum." While inventories of pulp are not evenly spread throughout the industry, it may be said that in most grades current inventories are at a postwar high.

Of course, the future cannot be considered without a consideration of the possibility of war and the effects of the national defense program. To be considered also are results of the ECA program. Meanwhile, the visible facts appear as follows:

1. U. S. imports of market pulp (excluding dissolving pulps) in 1948 (based

on nine months data) will probably not exceed 1,600,000 tons, slightly below the 1947 tonnage.

2. The U. S. will produce this year about 1,100,000 tons of market pulp, exclusive of dissolving grades, about identical with 1947.

3. The U. S. exports of paper-grade pulps this year are expected to be slightly less than those of 1946, or about 85,000—less than one per cent of the total U. S. production, and only about 8% of the U. S. market production of paper-grade pulps.

4. New supply of paper grades of market pulp in 1948 will total about 2,630,000 tons, and in addition to this, probably 80,000 tons of dissolving and special chemical grades will go to the mills this year, making a total supply of 2,700,000 tons of market pulp for the paper and paperboard mills.

5. Some experts say that U. S. consumption of market pulp by paper and board mills in 1948 may not exceed 2,650,000 tons when the figures are brought up to date. This would increase inventories of purchased market pulp by possibly 50,000 tons during the year, although rate of consumption and imports of European pulp are factors here.

The best observers believe that U. S. production of market pulp will continue at present levels of about 130,000 tons a month to a total, including dissolving grades, of 1,500,000 tons annually. These tonnages have been considered in our estimates—we do not expect that further increases could be of such magnitude as to affect our estimates appreciably. And if integrated mills continue to offer increasing amounts of surplus pulp (as has been the trend for the past ten months) the 1948 total of domestically produced pulp could be appreciably higher.

The same condition of wood and labor supply as in the U. S. would indicate

Some Figures on Imports

The U. S. Pulp Producers Association offers the following figures on imports of European paper grade pulps:

	First 9 Months	
	1947	1948
Sweden	422,278	322,265
Finland	152,894	151,519
	575,172	473,784
	Actual 12	Estimate for
Mos. 1948	533,941	418,000
Finland	223,193	200,000
	757,134	618,000

continuing heavy imports from Canada. Including dissolving pulps, market pulp imports now average about 100,000 tons monthly, with total annual imports running at the rate of 1,600,000 tons or about 1,000,000 tons more than a decade ago.

Most observers believe that our exports of market pulp in 1949 will increase over the 1948 average which up to December was about 8,000 tons per month. It is believed that demands of military governments abroad, and requirements of ECA, discussed later in this article, will result in a higher export level than has prevailed since 1945.

Regarding the market pulp consumption by the paper and board industry for the next six months, there is variance of opinion. All agree that increasing capacity will mean, of course, increased pulp supply. But some are optimistic on future demand, while others, and they are in the majority, believe that consumption in the first half year of 1949 is not likely to exceed the present rate of 220,000 tons per

(Continued on page 99)

Economic Cooperation Administration Procurement Authorization for Pulp and Paper, as announced to Aug. 16, 1948

Date Publicly Announced	Commodity	Authorized to	Country of origin	Amount in Dollars
June 27	Woodpulp, United Kingdom, Canada and Newfoundland			\$5,500,000
July 11	Newspaper, Bizonal, Germany, Sweden			1,434,000
July 19	Wood pulp, France, Canada			371,000
July 19	Waste paper, France, United States			22,350
July 26	Groundwood pulp, Bizonal, Germany, Sweden			888,000
July 26	Groundwood pulp, Bizonal, Germany, Finland			488,000
Aug. 2	Waste paper, Bizonal, Germany, United States			33,000
Aug. 2	Paper products, Bizonal, Germany, Netherlands			300,000
Aug. 9	Electrical pressboard and tympan paper, France, United States			20,000
Aug. 9	Wood pulp, Greece, Sweden			170,000
Aug. 9	Newspaper, Greece, Sweden			210,000
Aug. 12	Mech. wood pulp, Bizonal, Germany, Sweden			339,000
Aug. 12	Rayon grade wood pulp, Bizonal, Germany, Sweden			2,210,000
Aug. 16	Bleached cotton linters, Bizonal, Germany, United States			128,000
Aug. 16	Bleached cotton linters, Bizonal, Germany, United Kingdom			128,000
Aug. 16	Pulpwood, Netherlands, Canada			140,000

U. S. Department of Commerce, August, 1948

A PIONEERING MILL

SOUTHERN PAPERBOARD IS SUCCESS

This fall the eyes of many in the U. S. pulp and paper industry were turned toward the new mill of Southern Paperboard Corp. at Port Wentworth, Ga. For months it had been averaging 400 tons a day, sometimes attaining as high as 504 tons daily—and that was the proof of the pudding of design, construction and management.

Several mills have been running combined softwood and hardwood pulping operations on equipment and facilities added for the purpose, and with varying degrees of success. But here at Port Wentworth was the first mill in the Southern industry's history to be conceived, designed, and built from the ground up with that purpose in mind. One of the reasons for the great interest in Southern Paperboard was that different species of wood are being treated entirely separately throughout, in parallel lines of operation, and being combined as desired into blended furnishes for the 236-inch high-speed Fourdrinier kraft liner board machine.

However, this was not the only reason for interest in this fully integrated Southern mill. At Southern Paperboard is one of the most interesting refining layouts to be found in the kraft industry. As a mill

feature it vies for attention not only with the big Fourdrinier, which itself is of the most modern type and capable of speeds up to 1600 feet per minute, but also with the chemical recovery plant so essential to the kraft process.

Another reason for the unusual attention to Southern Paperboard was the extremely difficult conditions under which it was built: situations of economics, geology and weather all beyond control of the men who were struggling to bring the new industry into Georgia. Investigations for the location of the site were begun as early as 1945 and most of the principal equipment was ordered in the spring of 1946. The first concrete piling was driven in November of that year, but meanwhile electrical and steel strikes had considerably slowed down the schedule. Complicated negotiations was necessary in working out the details for process water for the mill from the newly constructed Savannah Industrial and Domestic Water Supply System which not only furnishes Southern Paperboard with at least 10,000,000 gallons daily, but also supplies the City of Savannah and part of the Union Bag & Paper Corporation requirements in Savannah. And in the final stages of construction, in the spring of this year, weather took a hand in delaying the start-up.

Yet, considering the scope of the mill and the delays, the construction record is in reality a remarkable one. When **PULP & PAPER** visited the mill a few weeks after its opening, the field editor found not only a highly successful integrated kraft pulp and paper manufacturing plant, but a management and employee organization, closely knit and already high in morale. The sense that Southern Paperboard at Port Wentworth is an organization is immediately felt in both office headquarters and the mill. It is an organization as streamlined as the physical plant itself, and for this the credit leads inevitably to Ernest Rossiter, president of Southern Paperboard. An executive with long experience in the industry, Mr. Rossiter does not believe in stressing the individual in an organization, but rather the interlocking of individuals into the whole structure of management and production. Yet a warmth of relationships is noticeable in this mill. The booklet for employees is significantly titled "Now That You Are One of Us" and the message from the president to the employee thoughtfully includes "your family."

Further along the lines of public relations and employee and management relationships, the 186 acres on which the mill is situated with plenty of room for possible expansion, are being landscaped. The approach to the mill or the offices

strikes a rightful pride in those connected with Southern Paperboard, and when the landscaping is completed it will have added something of very definite worth to the environs of Savannah and Port Wentworth.

More proof that Southern Paperboard is mindful of its place in the economics of the South and aware of its part in forestry progress is the fact that it will soon issue a booklet on Southern forests which will be directed not only to the farmers and woodlot owners who may furnish Southern Paperboard with a part of its supply, but to the general public as well.

There is a large amount of the unusual to see at this newest of Southern mills—things like the big Ingersoll-Rand fan pump which is believed to be the largest stock pump of its type in the industry and certainly one of the largest in all industries. This primary fan pump handles 40,000 gallons per minute.

There is the intelligent and logical use of color dynamics on machines, equipment, piping, and auxiliary equipment in the mill. There is the dramatically designed chip bin building, fed from the wood room by a covered belt conveyor and elevator, and where the chips are

THE MEN

The Southern Paperboard Corp. is a subsidiary of Robert Gair Co., Inc., with George E. Dyke, president of the latter, as chairman of the board; Ernest Rossiter, president; T. Raymond Pierce, vice-president; T. W. Earle, vice-president; E. O. Sommer, comptroller; E. Meyer, treasurer; W. F. Howell, secretary; William Bergman, assistant comptroller; A. J. Bauser, assistant treasurer; and R. B. Trotman, assistant secretary.

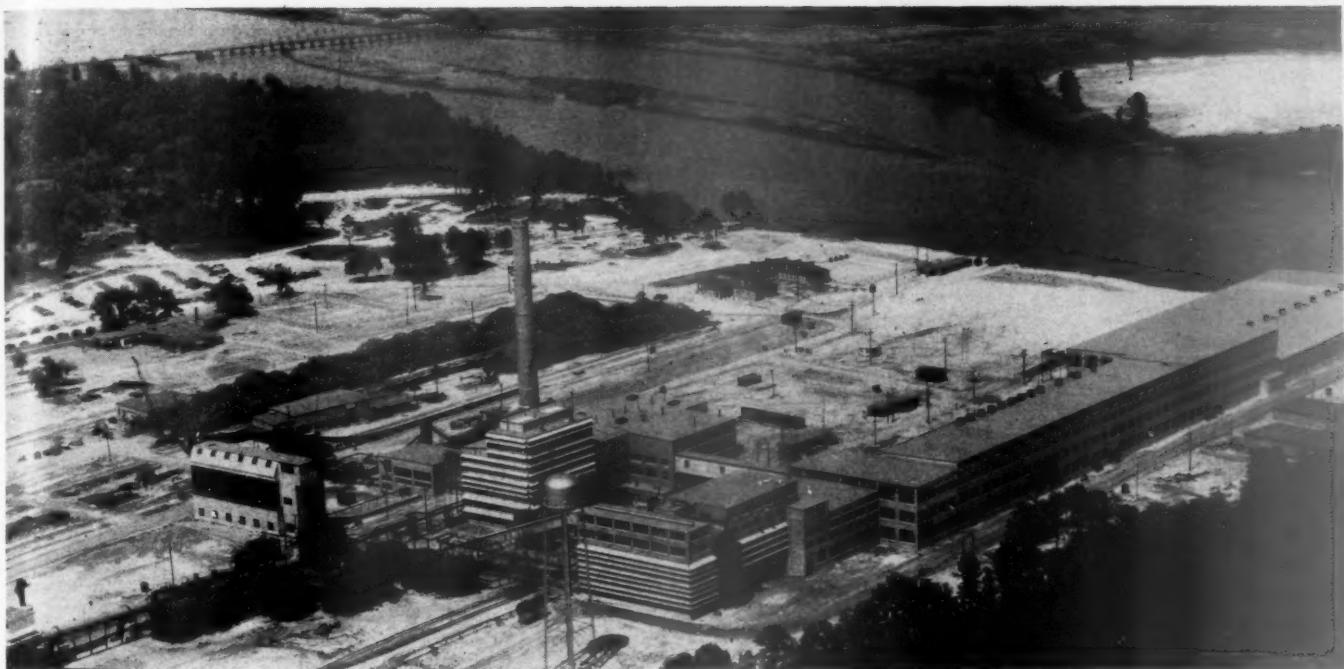
Procurement of wood and management of the woodlands acquired for Southern Paperboard's operations are handled by another subsidiary, Gair Woodlands Corp. under the direction of T. W. Earle, president.

Mr. Ernest Rossiter as president of the corporation, has been active in the development of the project since its inception. He has been assisted by H. W. Borman, assistant to the president; and Roland Wilber, superintendent.

LANDSCAPING A PULP AND PAPER MILL

The landscaping on the 186 acres of the Southern Paperboard Corp. includes a large number of camphor trees. There is a little story behind that which may be of interest and help to Southern mill owners who plan to landscape. It was found that pine trees quickly suffered the blight of the "pine borer" brought in with the mill's pulp wood. Camphor trees were the answer: they resist the insect pest and are decorative and evergreen.

Southern Paperboard's landscaping, which fans out pleasantly from the modified Williamsburg architecture of the main office, is at the present under the direction of a landscape man who is a native of Georgia and a graduate of the University of California. In the company's own greenhouse he gives start to plants, flowers and trees which are indigenous to the area, as well as to foreign flora which will do well in Georgia.



THIS AERIAL VIEW SHOWS SOUTHERN PAPERBOARD's new mill at Port Wentworth, Ga. Grounds are being landscaped, and the plant viewed with pride by both administration and employees.

measured automatically with a Merrick weightometer hooked up to a panel in the digester room. There is the huge Traylor lime kiln—300 by 8 feet—which has led a trend in Southeast coast mills toward much longer kilns for the more efficient and economic treatment of lime mud.

These and other features of the mill are shown graphically in the exclusive photographs shown with this article. For the moment let us concentrate in some detail on the refining and on the manufacture of 9-point, 16-point, and 23-point liner. We can then return to a discussion of the operations generally. It should be borne in mind that since no bleaching is done at Southern Paperboard, they use a hard pulp which gives the strength necessary for making board.

Refining Processes

The refining room layout is probably one of the most modern of the jordan type in the industry. Large and well-lighted, it is, like other parts of the mill, capable of comparatively easy expansion. Its fourteen E. D. Jones "Majestic" jordans are connected both in parallel and in series, an important point in the final treatment of softwood and hardwood stocks. There are two Taylor thrust recorders to adjust the plug in the jordan shell by instrumentation. The jordans are interconnected to give greater flexibility in the matter of requirements for each grade of pulp. Usually eight of the fourteen jordans are used for hydrating the base stock, three for secondary stock which discharges into respective concrete storage chests (from which they are pumped through finishing jordans) and two on the base stock leaving one on the secondary. A separate chest is maintained

for gum or hardwood pulp. There is a provision for separate refining and final combining of the two pulps ahead of the fan pumps, delivering to the machine. A DeZurik consistency regulator is ahead of the jordans. Alum and size are received in liquid form. A five-ton overhead crane serves the refining room.

Washing and Screening

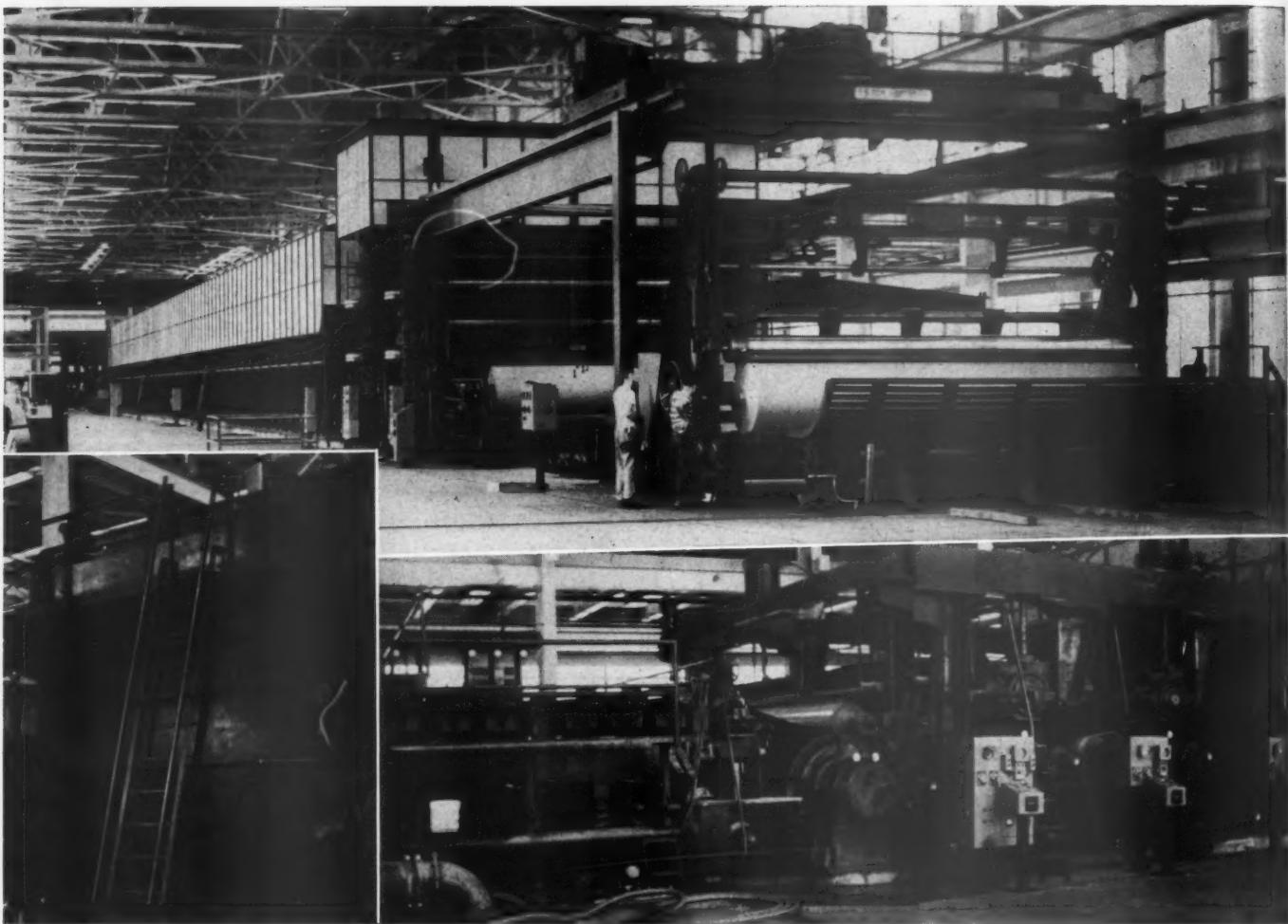
The washing and screening necessary to feed the proper pulp to this ultra-modern refining layout is of course pertinent and important. The arrangements at Southern Paperboard are in keeping with the engineering and design of the whole mill. There are two lines of vacuum type Impco washers. One is comprised of four, 8x14 washers for removing liquor from the quick cook, and the other has three, 8x10 washers for the treatment of the long cook on hardwoods. Interesting is the fact that the washers are set on the same level as the digester room operating floor. The liquor pumps are carried beneath the tanks. Impco vibrating pre-knotters have been installed ahead to improve the mat on the washers. Rejected knots go into a Noble & Wood jordan and return through the system. Auxiliary equipment here includes a Sprout, Waldron screenings refiner. Both washer lines are provided with Ross Engineering hoods and fans for the removal of vapors, and while the operating floor of the wash room is closed-in and conditioned, the canopy-type construction is used for the underlying floors, for maintenance accessibility to piping.

The deliquored pulp flows by gravity to two 15-ton storage chests from which it is pumped to the Impco primary rotary screens. Accepted fibers pass to the three

"NOW THAT YOU ARE ONE OF US"

This is the title of the very appealing and informative booklet issued to every new employee of Southern Paperboard Corp. The booklet leads off with a welcoming smile and a personal message from President Ernest Rossiter—a message to the employee AND HIS FAMILY. Among other things, it tells why the mill was built, why it was built at Port Wentworth, and what pulpwood trees mean to the mill and therefore to the employee. It explains what products are manufactured and tells where they go. It relates the beliefs of the management regarding its relationship to the employees. Above all, it tells the employee what he needs to know in order to work successfully and safely and in order to progress in Southern Paperboard. It concludes with a history of the parent Robert Gair Co., and the Fort Wayne Corrugated Paper Co.

Soon now Southern Paperboard plans to issue a similar booklet on forestry. It will be directed not only to the general public, but to farmers and woodlot owners who will be furnishing a material part of Southern Paperboard's raw supply.



PUSEY & JONES MACHINE PICTURES TAKEN BY PULP & PAPER at Southern Paperboard Mill: Top—End view of 236-inch, high speed Fourdrinier kraft liner board machine.
Lower—left, primary headbox on paper machine; right, Fourdrinier Section showing flat boxes on wire, couch roll, stone lump breaker roll and simplex press section with first and second presses.

Impco deckers and finally to the screened stock chest. Rejects from the primary screens go to a chest and then to the reject screen. Shives and fragments of knots can be returned to the system since pulp specks are not detrimental in the base sheet of board from unbleached kraft. White water from the thickeners is carried by their drop legs into separate concrete storage tanks under respective stock chests. Each chest has its own white water recirculating pump. The next step, of course, is the refining, as described.

Paper Machine

The machine room is a giant structure for a giant machine—and, moreover, it has been designed for the installation of a second machine when necessary. It is 630 feet in length and 70 feet wide at the present time, but has been designed so that the south wall can be moved out, and the tending aisle is already larger than necessary for the single machine. This is one of many indications of thinking ahead by the management and the J. E. Sirrine Co., engineers of Greenville, S. C.

To any paper man, the 236-inch Pusey-

Jones machine is a beauty in a beautiful setting. But handsome is as handsome does, so it should be said that the Fourdrinier machine has been keeping right up with the pulp mill as the final half of a marvelously integrated kraft operation. This machine has been described fully in the past issues of **PULP & PAPER** and it will suffice here to brief its features.

Flow box: three-pass, streamlined, 120-inch slice.

Fourdrinier section: 120 by 236-inch wire which can be tended without removing the Fourdrinier section; 28-inch breast roll; 10½-inch table rolls; ten 12-inch suction boxes and a special double box; suction couch roll 44 inches with one 7-inch suction box and one 12 inches; and notable is the secondary head box unit for applying a top film to the base sheet; duplex shake of high speed with two units.

Press sections—there are two, each with U. S. rubber covered upper rolls 30 inches and a lower rubber covered roll of suction type 36 inches in diameter; and unique is the fact that all are connected with a pneumatic loading system to dis-

tribute weight on bottom rolls as desired.

Dryer section—in four sections with twenty 60-inch dryers in each, and all journals are of extra heavy self-aligning rollers; driving train fully enclosed and lower tier of each section horizontally connected together by intermediate idler gears which also drive the upper dryers; central oil lubrication.

Calender stacks—two, between them the 60-inch diameter calender dryers; calenders have eight rolls each with pneumatic loading; first stack arranged for two water boxes. The machine is hooded in modern fashion by J. O. Ross, and this is a transite hood over the dryer section with eleven exhaust fans and two large heater and supply fans which provide about 75 per cent of the total make-up air requirements. The reel is of uniform speed type with 42-inch driving drum and six reeling drums. There is a two-drum uniform speed winder and a Puseyjones rewinder.

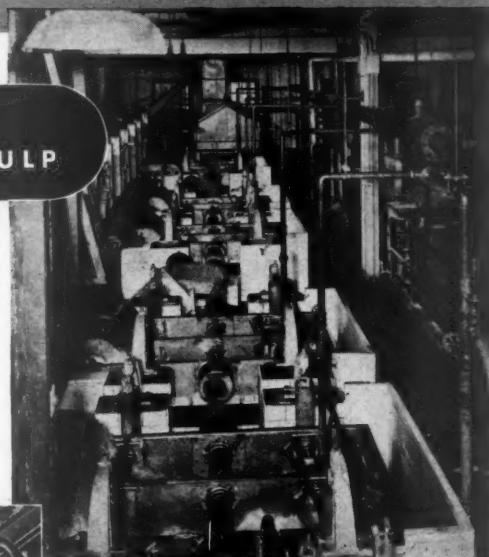
The machine drive is the new GE sectionalized individual electronic control type.

Broke from the machine is handled by

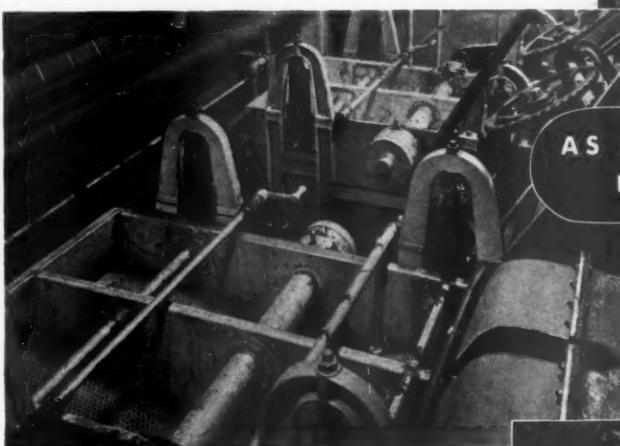
Lots and Lots of JONSSON SCREENS are going in:

AS KNOTTERS FOR ALL KINDS OF PULP

The Jonsson Screen combines powerful, precisely controlled vibrating action with a patented, special shaped screening area that whisks the knots, chips and dirt across and out before you can say "Jack Robinson" and with virtually no loss of fibres. Big capacity, low operating cost.



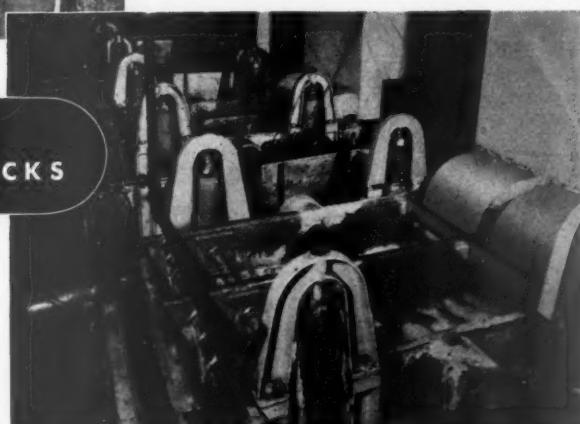
AS KNOTTERS AHEAD OF BROWN STOCK WASHERS



Vastly increases washer efficiency and economy. Vacuum is maintained and maximum recovery of black liquor is effected. The foaming problem is eliminated.

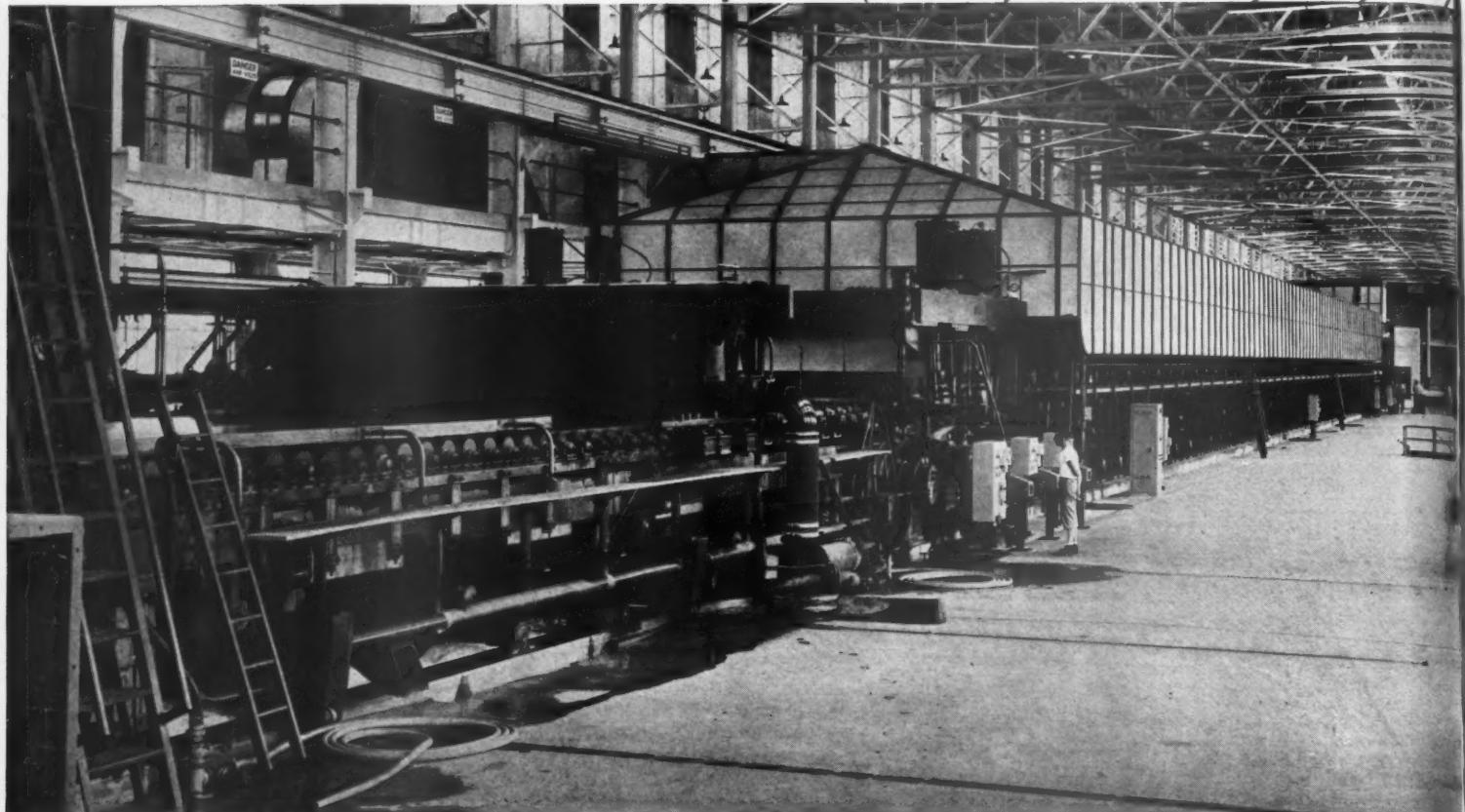
FOR SCREENING OF WASTE PAPER STOCKS

Jonsson Screens are ideal for handling waste paper and de-inked stocks. They remove every unwanted element — wet strength paper, cellophane, string, paper clips, rubber bands, etc. Tailings loss is negligible, capacity is great.



BIRD MACHINE COMPANY
SOUTH WALPOLE • MASSACHUSETTS

Largest Kraft Fourdrinier Liner Board Machine



We are proud to have collaborated with Southern Paperboard Corporation in connection with their expansion southward. It was our privilege to build for this great organization the largest Kraft Fourdrinier Liner Board Machine for their new plant at Port Wentworth, Georgia.



THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-Making Machinery
Wilmington 99, Delaware, U. S. A.



through the slatted sides of the drum onto a Shartle beater. This machine, with a 64-inch roll, returns the broke as pulp to the base liner machine chest.

Wood Handling

No discussion of Southern Paperboard would be complete, naturally, without a discussion of its wood handling and preparation, and the chemical recovery system which are such an integral part of Southern kraft mills.

The wood is composed primarily of pine and some hardwood, mostly gum, received at the yard by truck and rail. At present, wood runs 5 feet in length and from about 3 inches diameter up. The wood is unloaded either to ground storage or directly onto the log conveyors by cranes.

The logs are dumped into two Fibre-Making Process debarking drums suspended by link chains. Dams at the discharge end hold the drums about half full. Bark removed from the logs drops

a drag conveyor which constantly removes it. Bark is conveyed to a refuse hog where it is chopped to fairly uniform pieces. It is then conveyed as fuel to the bark burning boiler where it is burned to generate steam.

Each barking drum has its own conveyor and chipper. Species of chips may be separated in the ground storage bin by partitions.

Debarked logs are conveyed to 88-inch Murray chippers. The chips pass into large storage bins, and chips feed from the bottom of the bins onto a belt conveyor leading to the digesters. This conveyor belt passes through the Merrick automatic weighing device which will shut off the flow of chips when a pre-set weight has passed to the digester.

Digesters are welded steel, 9 feet in diameter by 45 feet, and built by Chicago Bridge.

The careful layout of the woodyard, the maximum use of power cranes, chain

and belt conveyors, and the full refinements in wood preparation down to weighing and measuring and instrumentation reveal Southern Paperboard's insistence not only on lowering its wood costs—or at least attempting to keep them where they are—but also emphasize its program of getting the most possible fibers from a given amount of pulpwood.

Recovery Plant

It is not surprising, therefore, that its chemical recovery plant has been designed and the equipment selected with the same conservative theory in mind. As in most mills of its process, Southern's dissolved solids in the pulp plant's strong black liquor consist of Sodium Hydroxide (NaOH), Lignin (the cellulose fiber binder material), Sodium Sulphide (Na_2S), Sodium Carbonate (Na_2CO_3) and Sodium Sulphate (Na_2SO_4), Rosin Acid and other carbonaceous materials. The steps in the preparation of the weak

EQUIPMENT IN ACTION AT SOUTHERN PAPERBOARD MILL: 1—Sextuple General American black liquor evaporators with soap skimmings tank in left foreground.

2—Right to left: Recovery building, precipitator and salt cake silo.

3—Wood preparation area showing barking drums and sorting table. Truck crane handling pulpwood in foreground.

4—Front end of chip storage building with chip conveyor and chip handling bucket elevator in foreground.

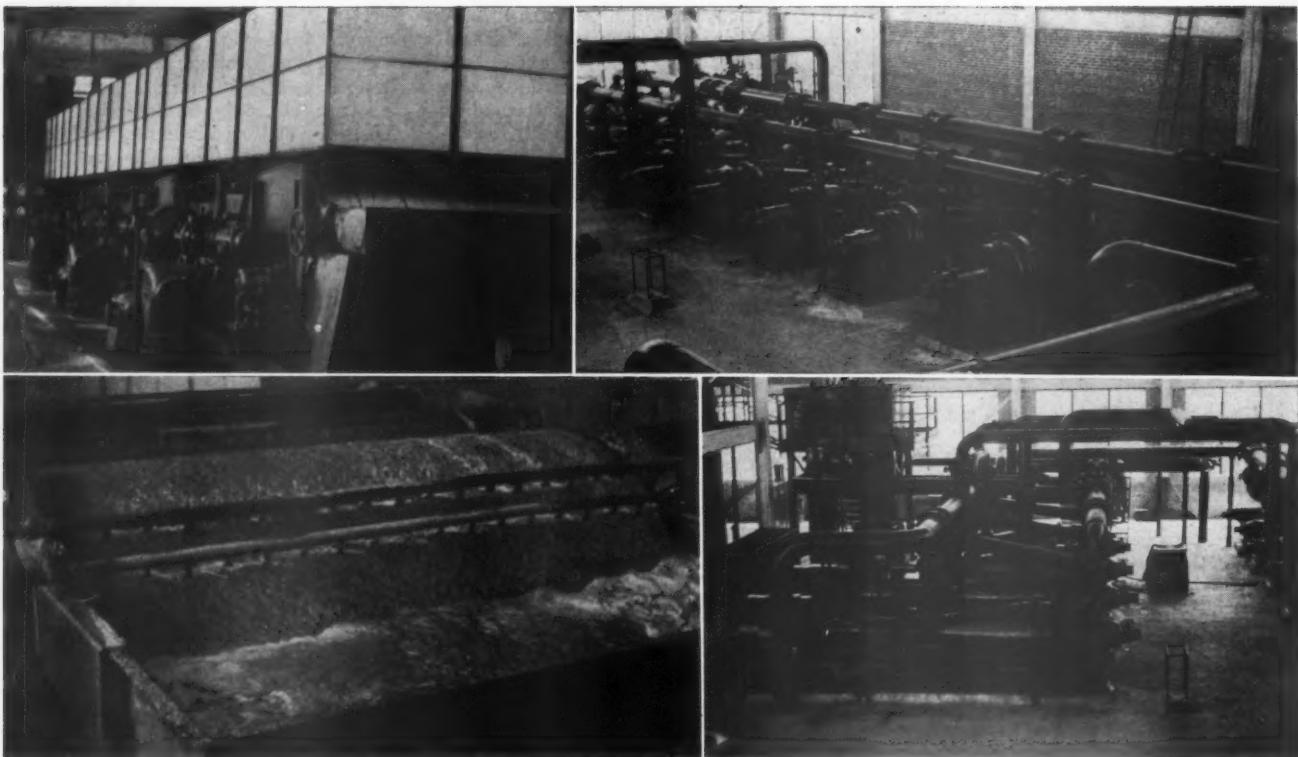
5—Barking drums in background and sorting table, rejected over-size pulpwood, and bark conveyor in foreground.

6—Lime kiln from center section showing feed and with lime storage hopper, track hopper and lime storage conveyor from track to feed section of kiln.

7—Rear view of chip storage building.

8—Merrick Weightometer for automatically weighing present weights of chips in chip storage building basement.





SOUTHERN PAPERBOARD MILL EQUIPMENT: Upper left—Second line of washers, by Impco, with hood by J. O. Ross Engineering. Upper right—Refining room showing E. D. Jones Majestic jordans (14) and parallel and "in series" piping. Lower left—Washed stock passing over No. 1 decker in screen room. Lower right—Four Jones Majestic jordans, for finishing, in refining room; in left background, consistency regulator for broke stock.

14 JONES MAJESTICS *installed at the*



black liquor are (1) Concentration, (2) Combustion of carbonaceous materials and conversion.

A six-body sextuple effect General American evaporator is the type used in the case of Southern Paperboard. The "effects" are numbered 1 to 6. The No. 1 Effect contains the most highly concentrated liquor and the effect containing the weak liquor is designated No. 6.

The weak liquor at 13 per cent solids and 180° F. is first pumped into a flash tank which is connected to the vapor inlet on the barometric condenser and is subjected to a vacuum of 27.5" Hg. which causes vapor to flash from the surface of the liquor in the flash tank. The liquor is then pumped out of the flash tank into the No. 6 Effect at approximately 14.5 per cent solids in solution, and 121° F. The decrease in temperature is caused by surface evaporation or flashing.

It then is concentrated to 16.5 per cent solids at 121° F. and is then pumped into Effect No. 5 where further concentration takes place up to approximately 18.6 per cent solids at 145° F. It is now pumped through soap skimming tank where the crude soap is removed and hence into Effect No. 4 where a concentration of 21.6 per cent solids at 170° F. is attained. This 21.6 per cent liquor is now passed over to Effect No. 3 where it is concentrated to 26.6 per cent solids at 193° F. and pumped over to No. 2 Effect where a concentration of 33.9 per cent solids at 216° F. is attained. The 33.9 per cent liquor is now

passed into Effect No. 1 which is steam heated. The liquor passing through the tubes and the steam surrounding the outside of the tubes at 30 PSIG and 275° F. The resulting condensate is returned to the boiler plant.

In all effects preceding Effect No. 1, the heating medium is vapor and condensate from the prior effects. The concentration effected in the No. 1 Effect is approximately 50 per cent solids at 245° F. The next step in the cycle is to pump the strong black liquor from storage up to the cascade evaporator where it is mixed with black liquor from the fly ash hoppers and the Cottrell precipitator mixing tank.

The concentration is now raised to approximately 65 per cent solids at 180° F. by means of the flue gases, resulting from combustion of the carbonaceous materials in the black liquor being fired in the C-E recovery furnace and passing through the passes in the boiler and cascade evaporator. Steam thus generated is then passed over to the Power Plant main steam header for distribution to the plant for process work and the generation of electrical energy. The relatively cool flue gases leave the boiler and pass over the black liquor in the cascade evaporator which is inserted in the flue gas stream where additional moisture is evaporated and a reduction of the flue gas temperature results. The flue gas, after evaporating additional moisture in the cascade evaporator, enters the precipitator.

Additional salt cake from the storage

silo is added to the concentrated black liquor and the liquor is pumped through direct contact steam heaters up to the sprays supplying the furnace. The resulting green liquor is now pumped over to the Dorr causticizing plant.

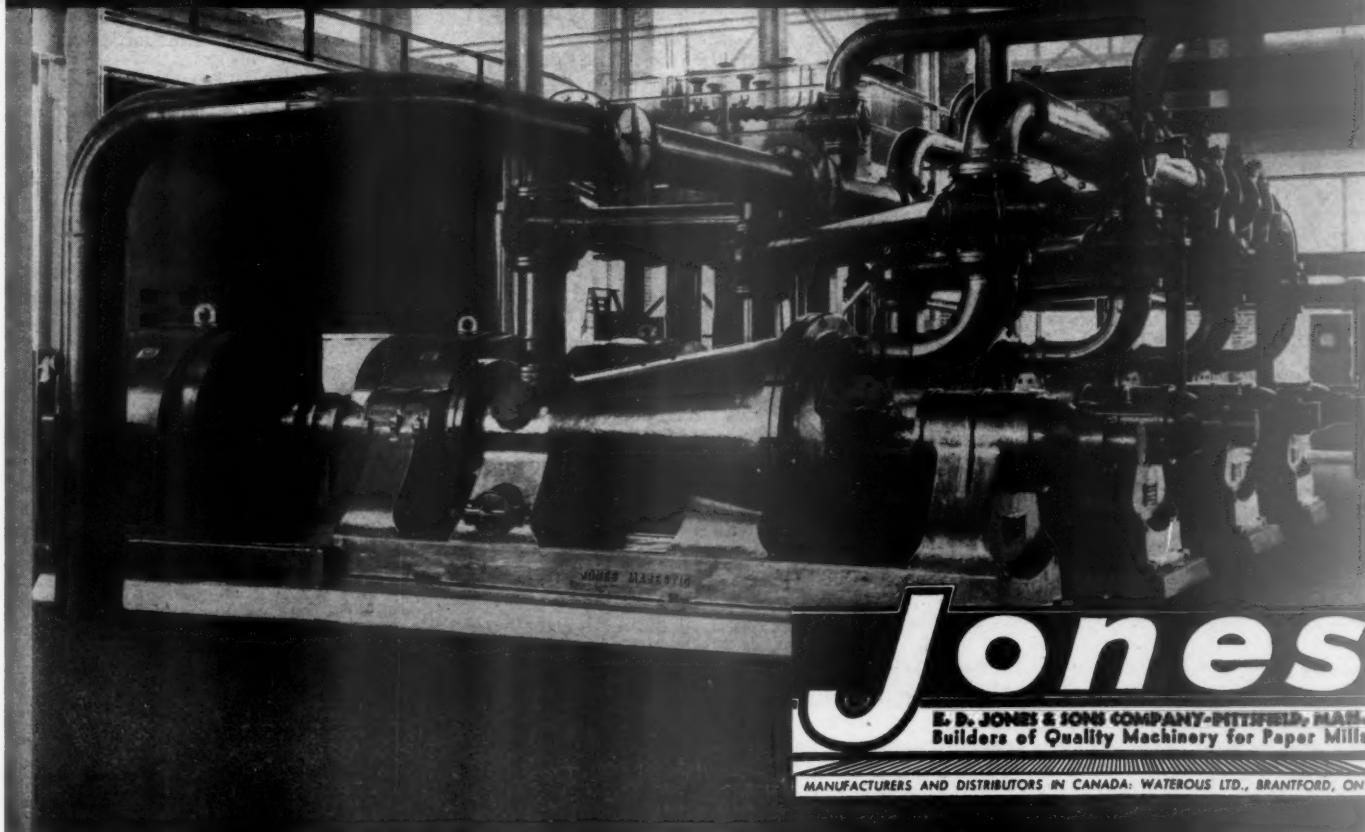
As is normal in this type of operation, the green liquor goes to the storage tanks until ready for use in the slaking operation. Leaving the causticizing tanks, the liquor and lime slurry flow to the white liquor clarifier which acts in the same manner as the green liquor clarifier.

Power Plant

A mill like Southern Paperboard needs wood supply, labor, water, and power. We have touched on all but the latter, except insofar as the chemical plant is concerned. Southern Paperboard has a three-unit power plant—boiler room, turbine room, and recovery room. Boiler and turbine room are in adjacent buildings, and the recovery room is connected to both. The boiler room has two Combustion Engineering oil-fired integral furnace power boilers of 1500 hp., and a third boiler, duplicating the other two, is provided with a Hofft furnace for burning bark and sawdust, and it will develop the same amount of steam when using oil alone or a combination of oil and wood waste. There are two Westinghouse units in the turbine room—one a 6000 kw. turbo generator, and another of the same capacity but of condensing type.

In this mill there are 22,000 hp. installed motor capacity. The electrical dis-

SOUTHERN PAPERBOARD CORPORATION, Port Wentworth, Ga.



Jones
E. D. JONES & SONS COMPANY—PITTSFIELD, MASS.
Builders of Quality Machinery for Paper Mills

MANUFACTURERS AND DISTRIBUTORS IN CANADA: WATERLOO LTD., BRANTFORD, ONT.

tribution is in two voltage level classes. The primary system is 4160 volts, 3-phase, three wire, 60 cycles, and supplied by the two turbine-driven generators. The secondary system is 440 volt, 3-phase, 60 cycles, supplied by unit type substations, and serves the smaller (maximum 150 hp.) motors and building lighting. Fluorescent lighting is used in all areas where the conditions permit. Wiring is in rigid metallic conduit which is installed exposed on the ceilings, walls, or under trusses, and fully safeguarded in wet areas.

As stated, the water requirements from the new Savannah filter system is 10,000,000 gallons daily, and water for fire protection, evaporator condenser, wood washing, and clean-up is pumped from the Savannah River. Process water is delivered through a 20-inch line at a 50-foot head and taken initially through the surface condenser of the turbine after which it is boosted to higher pressures for mill requirements. Savings on Southern's system, as compared with outside power, are said to range from 190 kw. hours per ton on a high day to 201 kw. hours per ton on a low day.

Thus the highlights of the South's newest mill, a mill where organization begins at the gate-house and doesn't end until the roll is in the car. It has no history as yet, nevertheless it has already taken its place in industry history as the first Southern mill to be designed and built for softwood and hardwood kraft operation. It is a splendid example of the inevitable trend away from the old type small machine "jute mill," which for so many years furnished board or liner at high production cost, to a highly mechanized and organized manufacturing plant in an ideal setting, combining quality with speed and low cost operation.



F. O. "NICK" BOYON (left), who joined Crown-Zellerbach Corp., Camas, Wash., as Paper Mill Superintendent of the Tissue Section Nov. 1, at which time the paper mill management was divided into two sections. Mr. Boylon came to Camas from Fernstrom Paper Mills, Pomona, Calif., where he was Mill Manager and prior to that was Production Manager of Scott Mills at Marinette Wis., and Glens Falls and Fort Edward, N. Y.

WALTER MILLER (right), whose appointment as Plant Engineer at the Anacortes, Wash., division of Coos Bay Pulp Corp., subsidiary of Scott Paper Co., is announced by C. Wylie Smith, Vice President and Gen. Mgr. Mr. Miller, 30-year old native of Minneapolis, graduated from U. of Minnesota '41, was with Watah Paper Co., Sartell, Minn., was an engineer in aviation industry and Lieutenant in the U. S. Navy during the war.

COAST SAFETY MEETINGS

First One Held at Tacoma, Wash.

The series of labor-management safety conferences, held successively in Washington, Oregon and California, were launched again this fall and winter. Sponsored by the AFL unions and the Pacific Coast Association of Manufacturers, the series of meetings started off in the northernmost state, with meetings at the Winthrop Hotel in Tacoma, Oct. 28 and 29. Like conferences were to be held in Oregon and California in November and December.

Some 150 labor and management representatives from more than 20 Washington pulp and paper mills participated in the Tacoma conference. Serving for the third time as co-chairman were John Sherman, vice president of the Pulp, Sulphite and Paper Mill Workers, and O. R. Hartwig, general safety supervisor, Crown Zellerbach Corp.

Discussion leaders included Lawson Turcotte, executive vice president of Puget Sound Pulp & Timber Co., Bellingham, and president of the Pacific Coast Association of Manufacturers; G. W. Charters, assistant resident manager of Crown Zellerbach Corp., Camas; A. E. Brown, vice president of the Paper Makers; and Oren Parker, international representative of the Pulp, Sulphite and Paper Mill Workers. State officials also took part.

Dan Adair, state safety official, said the Port Angeles division of Crown Zellerbach Corp. had recently been awarded a "Distinguished Service to Safety" citation by the National Safety Council for operating over 1,000,000 man-hours without a lost time accident, the first such award ever to be made in Washington. He stated also that the Port Townsend division of the same company had placed third among 57 competing mills in a nation-wide safety contest conducted by the National Safety Council. Longview Fibre Co. was cited as having made the greatest improvement in their accident record of any single plant in the state during the past two and one-half years.

Mr. Adair said state accident frequency of this industry has been reduced 80% in that time.

The program included "Preventive Maintenance," by G. W. Charters, assistant resident manager, Crown Z, Camas; a panel discussion on "Accident Investigation" headed by Ralph Paulson, Rayonier Incorporated, Shelton; "Safety Suggestions" by Clyde W. King of Fibreboard Products, San Francisco; a panel discussion on "How to Instruct the New Employee" with W. J. Shelton of Longview Fibre Co. presiding; "The Union's Interest in Safety" by John Teevin, field representative of the paper makers; and a "Safety Clinic" presided over by Robert Hetherington, of the Pulp-Sulphite Union.

The program of labor-management safety conferences, inaugurated by the Pacific Coast industry, has attracted na-



O. R. HARTWIG, General Safety Supervisor, Crown-Zellerbach Corp., Portland, Ore., addressing the Washington State pulp and paper industry labor-management Safety Conference at Tacoma Oct. 28 and 29. Seated at right is JOHN SHERMAN, Co-chairman, of Tacoma, Vice President of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers.

tionwide attention. A booklet released by the U. S. Department of Labor is prefaced by William L. Connolly, director of the Bureau of Labor Standards with the comment:

"The Bureau of Labor Standards believes that this example of labor-management cooperation for safety in the Pacific Coast pulp and paper industry may offer useful suggestions to employers and unions in other industries."

At the President's Conference on Industrial Safety in Washington, D. C. Sept. 28 and 29, Secretary of Labor Maurice J. Tobin cited the Pacific Coast safety program as an outstanding example of labor-management cooperation.

During the three years that the conferences have been held, definite progress in the reduction of accidents has been accomplished. The 1947 accident frequency rate for the 19 State of Washington mills participating in the program was 26.97 lost-time accidents per million man-hours worked. For the year 1948 to date, the frequency figure has been reduced to 13.77 lost-time accidents per million man-hours worked, which figure is below the national average.

THE SOUTH CONSUMED more pulp-wood in manufacture of paper and paper products during the first half of 1948 than any other region, according to U. S. Department of Commerce. Consumption amounted to 4,546,000 cords, an increase of 7.7% over the first half of 1947.

GS



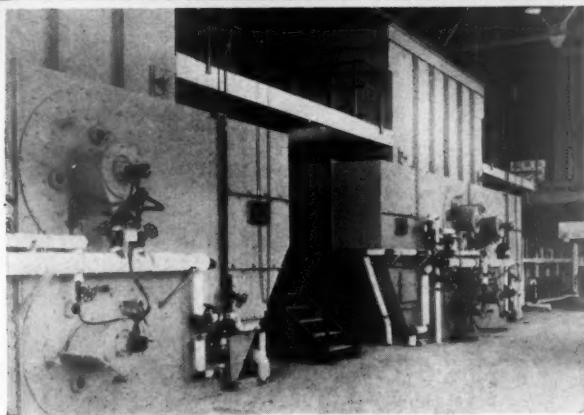
(Above) Air view of new mill. Building at left of stack houses two C-E Recovery Units. Building at right of stack houses C-E bark-burning boiler and two C-E oil-fired boilers (Type VU).

ALL Steam Requirements at Port Wentworth Supplied by C-E Units

Now receiving the well deserved attention of the entire pulp and paper industry is the new modern kraft mill of Southern Paperboard Corporation at Port Wentworth, Georgia. Here is the first pulp and paper mill in the South designed from the start to run combined hardwood and softwood pulping operations.

The record of the mill since its opening several months ago indicates the complete success of this enterprise. It has averaged four hundred tons a day and has at times produced as high as five hundred. C-E is proud of the important part it has played in this history making kraft mill, having provided not only the Recovery Units, but ALL the steam generating equipment.

The Combustion Engineering equipment comprises



(Above) Portion of boiler room at Port Wentworth. In the foreground are the two C-E oil-fired units. The C-E bark-burning unit is at the extreme right background.

two Recovery Units, one VU Steam Generator with Hofft Furnace for bark burning, and two oil-fired VU Steam Generators (arranged for future use of coal) for power purposes. All operate at 625 psi and 700 F. The bark-burning VU has a maximum continuous capacity of 96,500 lb of steam per hr and the two power units 120,000 lb of steam per hr each. Each of the two Recovery Units is designed to burn 635,000 pounds of black liquor solids per 24 hours.

More and more mills are turning to C-E for both new installations and expansion of existing ones. The choice of C-E by Southern Paperboard Corp. is another impressive example of the wide acceptance of Combustion Engineering equipment in this exacting field.

B-273

COMBUSTION ENGINEERING

200 MADISON AVENUE • NEW YORK 16, N. Y.

C-E PRODUCTS FOR THE PAPER INDUSTRY INCLUDE STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT. ALSO MANY TYPES OF PRESSURE VESSELS

Pacific Coast: R. L. JOHNSON CO., Monadnock Bldg., San Francisco, and Petroleum Building, Los Angeles
DECEMBER, 1948



MOST OF THE MILLS IN HOLYOKE, MASS., can be spotted in this air view by people who are familiar with this famous paper mill town. There are seven American Writing Paper Corp. mills and also the mills of Chemical Paper Mfg. Co., Crocker-McElwain Co., Franklin Paper Co., Newton Paper Co., Parsons Paper Co., Valley Paper Co., Whiting & Co., Inc., and Whiting Paper Co.

Holyoke—Paper Center CELEBRATES ITS 75TH BIRTHDAY

Recently Holyoke, Mass. — often called "the fine writing paper center of the world"—celebrated its 75th anniversary as a city. A sizable part of its 56,000 people, many of them employees of paper mills, took part.

And there were visitors, too. It is not generally realized that nearly a third of the total U. S. population lives within 500 miles of Holyoke. About thirteen per cent of U. S. citizens live within 150 miles of the paper town.

In Holyoke's 75th year an editor of **PULP & PAPER** called again and found the tempo of the city still synchronized to its paper machines. The first company established to make paper in Holyoke is still one of its most successful industries. Holyoke is still making rag and sulfite papers, tissue, coated and fancy papers, cover stock, specialty papers, and dozens of other paper and converted items. What is more, it makes its contributions to the paper industry in the manufacture of wire cloth, dandy rolls, knives, air compressors, copper and steel wire, leather belting, machine tools.

The secret is the same as it was in the beginning: the Connecticut River and the remarkable system of canals designed and built nearly a century ago by engineers intent upon laying out an industrial city.

The hydraulic system comprises a dam and four and a half miles of canals owned and operated by the famous Holyoke Water Power Co. It supplies local mills with hydraulic power and water for processing. The Connecticut is a "soft" river suitable particularly for making paper and textiles.

There are not as many paper mills in Holyoke as in days of old, true enough. Many a non-paper manufactory is housed today in what was once an old paper mill. Dozens of small businesses carry on in what were once the smaller outbuildings of paper mills along the quiet canals. Yet, so well informed sources say, the tonnage out of Holyoke now is probably an equal amount to that of any other period in the city's history. This is due to improved equipment and methods, and to modern management.

Take the case of the American Writing Paper Corp. At one time this company operated 6 mills in and out of Holyoke. As late as 1937 it was operating more mills than at present. Organized again in that year under the laws of Delaware, its present top officers are Thomas H. Blodgett, chairman of the board and president; and E. C. Reid, first vice-president. Early in the operation, under this management, AWP began to consolidate ma-

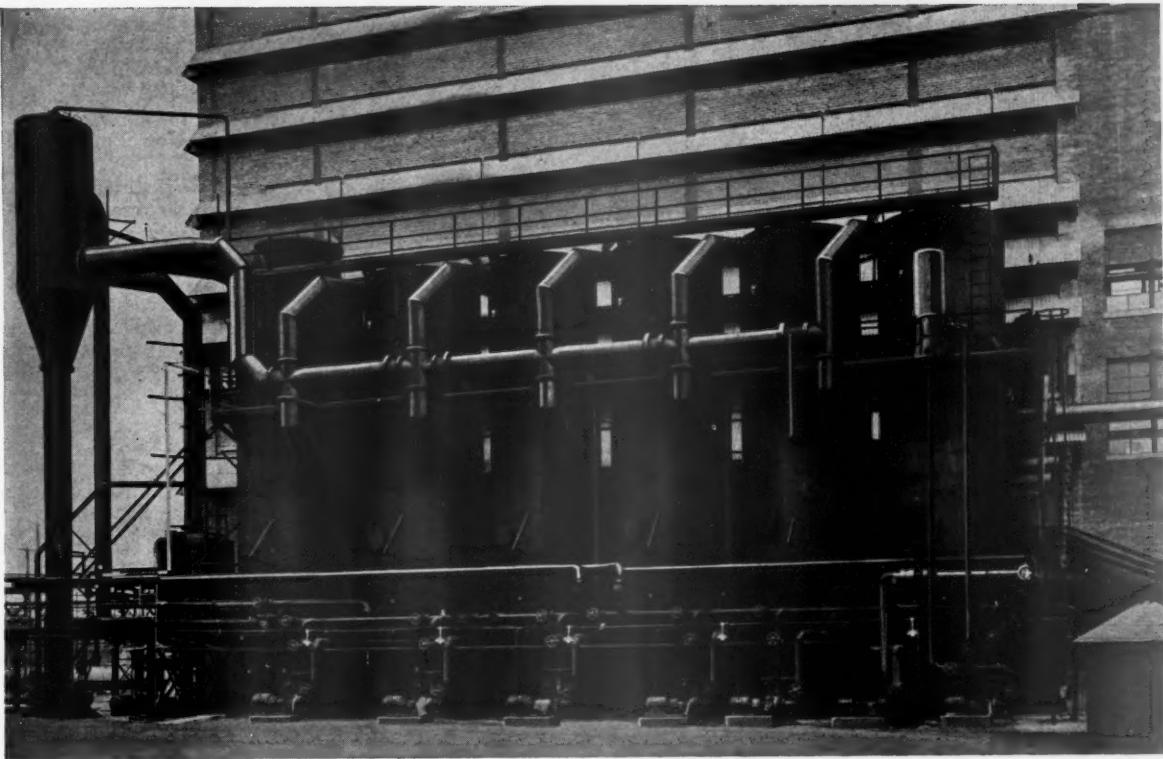
Holyoke Not Worried Over Power Licenses

Contrary to recently published reports, well informed citizens of Holyoke do not feel that applications of the federal licenses to develop hydroelectric power potential at the Holyoke dam will affect adversely the paper industry or any other industry in Holyoke.

Said one informant: "All plans provide for ample supply of process water and the additional electrical energy, if there is any developed, should certainly not be harmful. In any event, most of us feel that the Holyoke Water Power applications will prevail."

chinery and processes in fewer buildings and to streamline the operations in many ways. According to S. Bradley, director of advertising and sales promotion, the corporation now operates the following eight mills: No. 2, 5, 8, 12, 13, 14, 16, and No. 19. They are all at Holyoke. The company prefers to identify the mills by numbers preceded by "Eagle A" rather than by the old names. This becomes understandable when one knows that one of the old names was "the Parsons mill" and there exists in Holyoke the very well known Parsons Paper Co. which has no connection with American Writing. There were other conflicting names.

Helen U. Kiely, director of the laboratory, is one of the best known executives at American Writing and, indeed, in the whole industry. She is extremely active in New England TAPPI and a policy-maker in that organization. About a year ago she suffered a serious automobile accident which alarmed her hundreds of friends in the industry, but when **PULP**



One of the largest SINGLE EVAPORATOR INSTALLATIONS in the U.S. is at the new plant of the SOUTHERN PAPERBOARD CORPORATION

Containing 63,000 sq. ft. of heating surface, this unit—a Conkey Self-Supporting Sextuple Effect Long Tube Film Type Evaporator—is concentrating black liquor.

The Conkey Self-Supporting Type was chosen because of the following features—

- Low installed cost.
- Greater capacity per square foot of surface.
- Lower pressure drop between effects.
- Simplicity of operation.
- Goes on the line quickly.
- Reduces overall down-time.

Other large Conkey Self-Supporting Type Evaporators are installed in leading pulp mills on this continent.



GENERAL AMERICAN TRANSPORTATION CORPORATION

Process Equipment Division

SALES OFFICE: 10 East 49th St., Dept. 820a, New York 17, N.Y.

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C. J. YARBER, General Superintendent of the Chemical Paper Mfg. Co., watches the first commercial run of newsprint made from 100 per cent straw fibre, come off No. 3 machine at the company's Holyoke, Mass., mill.

& PAPER visited she was hale and hearty and about ready to embark on her first long convention trip since the accident. She was heading toward Poland Spring, Me., to take in the Northeast Superintendents' meeting.

This Fall the mills of Holyoke were seriously hit by the long trucking strike which kept them out of their big markets like New York, Philadelphia and Boston. Also, fine papers had softened a bit in demand. But such things to Holyoke are only the ticking of a second-hand within an hour.

Some of the paper mills had displays during the 75th anniversary celebration, and two entered floats in the big parade—but the Mayor of Holyoke expressed himself to **PULP & PAPER** as being disappointed in the "absence" of many paper mills from the celebration. The reason is not far to find: very few paper mills these days find themselves with enough time and personnel to take part in extracurricular activity and keep up with production. And the mayor was not quite accurate, for actually thousands of paper mills took part in the celebration via the most vital factor of a mill: the employes.

Among the famous Holyoke mills, in addition to Parsons and American Writing, are Crocker-McElwain Co., Franklin Paper Co., Newton Paper Co., Valley Paper Co., Whiting & Co. and Whiting Paper Co., operated by two brothers, Edward running the former and William Whiting the latter.

Wheat Paper Attracts Nationwide Attention

During **PULP & PAPER'S** visit to the Holyoke anniversary celebration the Chemical Paper Manufacturing Co. attracted nationwide attention by running 100 percent wheat straw newsprint on its machine in an experimental run. According to R. H. Morrill, vice president and general manager, the experiment was not connected with his company which merely loaned its equipment for the purpose to the Kinsley Chemical Co. of Cleveland, Ohio. According to the president of this concern, H. L. Kinsley, newsprint made from 100 percent wheat straw could be marketed for \$65 to \$72 per ton. E. R. Timbowski, a Kinsley chemist, orig-

inated the process and four tons were turned out at Holyoke. The color was good. Considerable shives were present in the sheet, but Mr. Morrill pointed out that his mill has no pulping equipment and in a normal wheat straw operation these shives would be screened out. One big question was whether the sheet would stand up on modern printing presses and these tests had not been carried out when **PULP & PAPER** called at Chemical Paper.

Personals

NORTHEAST

Richard Probst Becomes Oxford Assistant Manager

T. Richard Probst, prominent in the industry in both Wisconsin and New England, has joined Oxford Paper Co. as assistant manager of the Rumford, Maine, mills. Oxford makes soda and sulfite pulps and coated and other papers, with capacity of over 500 tons a day.

He will be assistant to T. F. Spear, assistant vice president and Rumford mills manager.

Mr. Probst is a graduate of Penn State and the Institute of Paper Chemistry and was former assistant treasurer of Keith Paper Co. of Turners Falls, Mass., and former technical director at Gilbert Paper Co., Neenah, Wis.

CILTON N. NILSON, 43, development engineer for E. D. Jones & Sons Co., Pittsfield, Mass., died suddenly Nov. 2.

ALDUS C. HIGGINS, chairman of the executive committee, Norton Company, died Sept. 10 at Worcester, Mass. He was 76. He became attorney for Norton Company in 1901 and has been an officer since 1913, serving as president from 1933 to 1941 and board chairman till 1946.

D. K. MACBEAN, development engineer for B-F-D Div., Diamond Match Co., and formerly with Weyerhaeuser, recently took his wife and their twin 11-year old daughters on a vacation in Colorado. They live at 161 So. Lexington, White Plains, N. Y.

LOUIS CALDER, president of Perkins-Goodwin Co., New York City, recently returned from an extensive world trip during which he visited many P-G connections. His itinerary included East Africa, Nairobi, Egypt, Italy, Switzerland, Sweden, and Scotland. He was later joined overseas by STANFORD G. BLANKINSHIP, vice president, who also recently returned to New York.

JAMES J. EBERL has been named director of chemical research of the Scott Paper Co., it was announced recently by RAYMOND C. MATEER, executive vice president at Chester, Pa. He was formerly with the Papermakers Chemical division of Hercules Powder. His assignment will involve chemical engineering and research as applied to all Scott pulp and paper mills.

HAROLD F. SHERWOOD of Kodak Research Laboratories, Rochester, N. Y., received the Rodman Medal at the 93rd Annual International Exhibition of the Royal Photographic Society in London, England, for outstanding work in microradiographs of thin sections of metal, wood and paper.

DAVID BEEMAN, son of Vice President Lyman Beeman of St. Regis Paper Co., played end on the Dartmouth College football team this year.

ARNOLD BAREA, of Castle Overton, New York, formerly of Paterson Parchment Paper Co., Bristol, Pa., returned recently from a trip to South America. Last year he toured Europe and his wife stayed most of the time in Switzerland with friends in the Swiss Industry.

MRS. JOE (Myrtle) SCHEUERMANN, wife of the vice president and sales manager of Cameron Machine Co., is the president of Manhasset, Long Island, Women's Club, but it didn't keep her from making the trip to the Buffalo TAPPI meeting with Joe.

Weyerhaeuser Kraft Mill Has Trial Run

The first bleached pulp—500 tons of it—was produced in the new 200-ton-a-day kraft pulp mill built by Weyerhaeuser Timber Co. at Longview, Wash., on Nov. 5. Erroneous reports published elsewhere had said this mill started up last August.

As a matter of fact, it was still not in continuous production immediately after the trial run Nov. 5 and when it is, **PULP & PAPER** will carry the official description. It is an interesting additional unit to the varied Weyerhaeuser timber industries as it makes possible far greater utilization of that company's wood resources including sawmill "leftovers," farmer wood, logging culms and log salvage.

A Rice Barton 156-inch Minton dryer with 32 dryers and all latest equipment produced the pulp processed in a new pulp mill and a unique 6-stage batch bleach plant. First run was only four days after final connections were hooked up.



Be



Personals

MIDDLE WEST

FRANK J. DVORAK, assistant to the president, and **ROY J. SUND**, vice-president, have been elected directors of the Marathon Corp., and **DONALD A. SNYDER**, director of sales, has been named a vice-president, according to D. C. Everest, president. Besides serving as assistant to the president of Marathon, Mr. Dvorak is president of the Wisconsin Valley Trust Co., Wausau, Wis.

ROBERT W. REED has joined Rhinelander Paper Co., Rhinelander, Wis., as supervisor of fundamental research and **JOHN TUTTLE**, who joined the company last year, has been named plant engineer, according to President Folke Becker. Mr. Reed was with Ozalid Division of General Airline and Film Corp., and Eastman Kodak, prior to that. Mr. Tuttle came from Glassine Co., West Conshohocken, Pa.

WILLIAM E. NASH, member of a prominent paper industry family and former sales manager of Nekoosa-Edwards Paper Co., died Oct. 19. He had been retired since 1930 because of a traffic injury.

POTTER PARK, comptroller and purchasing agent for Fox River Paper Corp., Appleton, Wis., was accidentally killed in an automobile accident at that city on Oct. 27.

FRED HEINRITZ, 54, president of Appleton Coated Paper Co., Appleton, Wis., died October 20 at his home in Appleton. He has been associated with the company for 38 years and was a native of Wisconsin. He is survived by his widow, two sons, James and Fred T. and two daughters, Rosann and Mrs. E. F. Marcellus.

H. B. PALMER, assistant mill manager, Kimberly-Clark's Badger-Globe mill, **FRED HOLLENBECK**, plant engineer and **ANTON BEVERS**, engineering dept., inspected equipment and set up a fire equipment demonstration in special National Fire Prevention week activities at the mill.

FRED GOODWILL, new resident manager of the St. Regis mills at Kalamazoo, Mich., has moved his car to "Kazoo" and his three daughters will soon be ready to make the move from Deferiet, N.Y., as soon as the new home was secured. Another daughter is married.

JAY KAAP, assistant technical supt. of Kimberly-Clark's Kimberly, Wis., mill, recently announced the department has gone 700 days without a lost-time accident. **J. T. DOERFLER**, mill manager and **AL BRIGGS**, personnel supt. extended their congratulations during the department's safety party.

Heuer Discusses De-Inking 177 ATTEND LIVELY DISCUSSION

J. H. Heuer, technical director of St. Regis Paper Co., Deferiet, N. Y., an appointment recently announced in **PULP & PAPER**, discussed de-inking of waste papers with sodium peroxide at the Michigan Superintendents meeting on Oct. 21 at Kalamazoo. Attendance was 177. He acted as moderator for a two-hour panel discussion after his talk, with seven mill executives and superintendents and two chemical men on the impressive panel.

Publication papers are now running as high as 50% groundwood, said Mr. Heuer, and the growing use of hydrogen and sodium peroxides in place of soda ash in preparing pulp is a feature of this trend. He said there was a need of improved techniques for recovering waste paper.

Mr. Heuer said the sodium peroxide process for de-inking waste paper includes treatment in Hydrapulper or other defibering machine with a solution of alkali and sodium peroxide, followed by a mild cook. Peroxide persists to the end of the cook, sufficiently to inhibit color reversion of groundwood under hot alkaline treatment.

Economic and technical advantages of the process, he said, are that:

Lower grades of waste paper can be used and meet quality standards. It has been possible to increase magazine stock 50% to 75% and reduce ledger stock 50% to 25%. (Advantages more than offset increased chemical costs.) Less alkali is needed. Shorter and modified cook reduces steam costs and increases production capacity. Less fiber degradation means higher yield. Brightness level and brightness uniformity have both been improved after a sodium hypochlorite bleach.

He said the St. Regis mill in Kalamazoo reduced labor cost by eliminating belt sorting of waste paper.

J. H. HEUER, Technical Director, Central Laboratory, St. Regis Paper Co., Deferiet, N. Y., who stirred up 2-hour discussion at big Michigan meeting.



AT MICHIGAN SUPTS. MEETING were: Top (l to r), **WILLIAM F. HATHAWAY**, Kalamazoo Vegetable Parchment Co., who presided in the absence of Chairman Herbert Johnston; **ARTHUR W. COLE**, Rex Paper Co.; and **JAMES A. WISE**, Kalamazoo Paper Co., both panel discussion members. Bottom (l to r), **GLEN SUTTON**, Sutherland Paper Co., and a national Vice President of the Superintendents' Association; **ROBERT E. WALTERS**, Associate Editor for the Midwest of **PULP & PAPER** magazine.



Officers Elected By Northwest Superintendents

New officers elected by the Northwest Division of the Superintendents' Association during their Fall meeting at Merrill, Wis.:

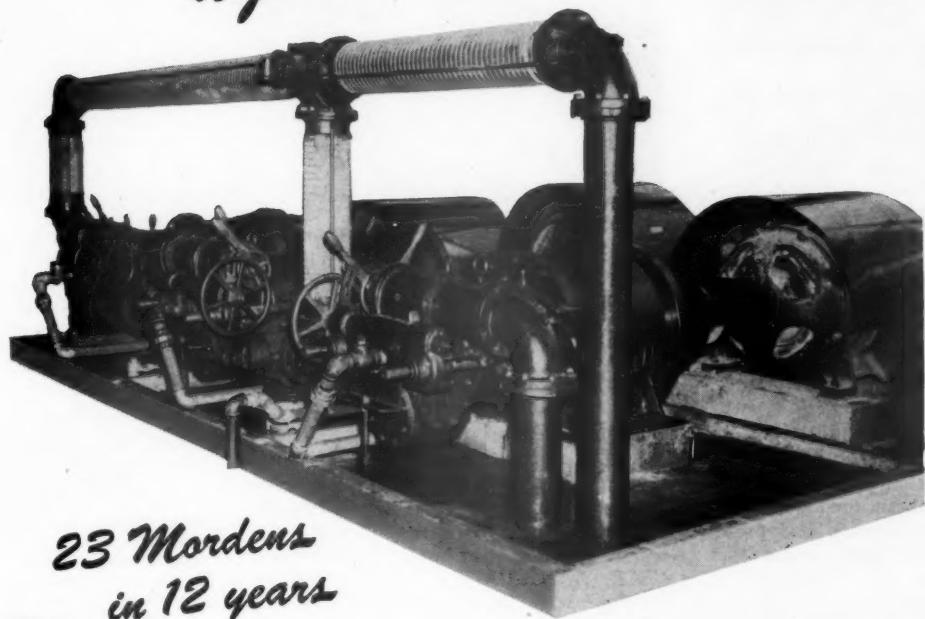
Frank X. Kreiling, Thilmany Pulp & Paper Co., chairman; **Laurin Sabatke**, Marathon Corp., first vice chairman; and **Mace V. Harris**, The Northwest Paper Co., second vice chairman.

Three trustees elected were: **Grover Keeth**, Marathon Corp., for one year; **Charles H. Reese**, Nekoosa-Edwards Paper Co., two years; **Edward E. Den Dooven**, Northern Paper Mills, three years.

Fred C. Damp, Ward Paper Co., was convention chairman and **S. E. Ekman**, Rhinelander Paper Co., was retiring chairman.

There were 127 registered for the sessions. Of these, 54 were mill men.

Crown Zellerbach Corporation again selects Mordens



*23 Mordens
in 12 years*



INVESTIGATE!

**Ask Morden NOW
for a survey of
"Stock-Maker's"
advantages in
your mill.**

The above photograph shows three of the five Morden "Stock-Makers" on the new No. 15 Paper Machine at Crown Zellerbach's Camas Mill.

Crown Zellerbach were Morden's first customer some 12 years ago. It has been a real source of satisfaction to us, since that time, to have had the pleasure of working with their organization during the installation of a total of 23 Mordens in five of their mills for use on a wide variety of kraft and sulphite grades.

When you realize that over 50% of Morden's orders, during the past few years, have been repeat orders from previous customers, you will know why mills say:

"It will pay you to have Morden explain how
'Stock-Makers' can help your beating and refining."



MORDEN MACHINES COMPANY
PACIFIC BUILDING • PORTLAND 4, OREGON

in Canada

The William Kennedy & Sons, Ltd. Owen Sound, Ontario

DECEMBER, 1948

in England

Millspaugh, Limited, Sheffield

Professionals

PACIFIC COAST

John A. Wilcox of Longview, Dies

John Alfred Wilcox, a director and process engineer for 18 years at Longview Fibre Co., Longview, Wash., died Oct. 8 in Providence hospital in Portland, Ore., following an extended illness.

Survivors are the widow, Bertine; two sons, John M. Wilcox of Electric Steel Foundry Co., Portland, Ore., and Robert E. of Seattle; and five grandchildren.

Mr. Wilcox was born in Portland Jan. 29, 1881. He graduated from the University of California and held engineering positions in California and Alaska. He left a position as president of the Benicia Water Co. of Benicia, Calif., to come to Longview. Mr. Wilcox was responsible for the development of special evaporator equipment and other technical processes used in Longview.

ROBERT STANNARD, head accountant at Fibreboard Products, Inc., Port Angeles, Wash., and long editor of the Blow Pit, that mill's house organ, died suddenly in mid-October. Mr. Stannard had previously been finishing room superintendent at the mill.

WALTER SALMONSON, Coast representative of Cheney-Bigelow, Draper and DeZurik companies, has moved his family into their new home at 2514—Northeast 59th Avenue, Portland 13, Ore., which will also be his office.

NELSON HARTNAGEL, assistant manager of the Fibreboard mill in Port Angeles, and in charge of that company's recently developed logging operations on the Olympic Peninsula, made quite a ceremony in Seattle of launching a little duck-boat for the logging. Beer was used for the launching "because the shipyard was too small for champagne."

EDGE WENNBERG, general superintendent of Columbia River Paper Mills, and his wife made a recent trip to San Francisco for a vacation and enjoyed the Bay City with the Ben Natwicks, there at the same time.

O. W. MIELKE, general manager of Blake, Moffitt & Towne, San Francisco, and his wife are touring Holland, Belgium, Switzerland, Italy and France as well as England and Scotland, traveling by private automobile this fall.

JOHN McDERMOTT, new general paper mill superintendent of the new St. Regis paper mill built at Tacoma, Wash., moved permanently to the Puget Sound city Nov. 1 and was looking for a home there. He had made previous visits to Tacoma.

BILL COSTER, general superintendent, Soundview Pulp Co., Everett, Wash., made a recent trip east, visiting mills and attending the Buffalo TAPPI meeting.



FEATURED AT PAPER MILL MEN'S Club festivities during Paper Products Week in Southern California (left to right) seated, George Skleba, General Chairman of the club's Hi-Jinks; Joan Marsh movie actress; Jean Guierre, "Miss Paper Products of 1948;" G. N. Madigan, of Johnson, Carrell and Murphy, President of the Paper Mill Men's club. Standing, Lucille Zimmer, Zellerbach Paper Co., Los Angeles Div.; Irvin Damon, Northern Paper Mills, Vice President PMMC; Dorothy Jackson, Milprint Co.; Roland Wolfe, California Cotton Mills Co., Treasurer; William Gardiner, Nekoosa-Edwards Paper Co., Financial Chairman of the Hi-Jinks. Others on the committee but not pictured include: Sam F. Goldman, Vice-Chairman; Merle M. Paul, entertainment; C. J. Warren and George A. Ward, golf; George B. Woodcock, door prizes; J. C. Fischer, program; Neil B. Sinclair, reservations; Paul R. Halstead, soft ball; G. A. Thiem, publicity.

Galen Congratulated

D. J. GALEN, Secretary, Crown-Zellerbach Corp., San Francisco, who was receiving congratulations Nov. 1 on rounding out 40 years with C-Z and its predecessors. Native of Portland, Ore., he went to work in San Francisco for Crown Columbia when it only had 9 employees. He got mill experience at Floriston, Calif., and in 1912 he became Secretary to the Gen. Mgr. In 1917 he was appointed Purchasing Agent, and in 1925, Asst. Secretary of Crown Willamette Co.

When that company and Zellerbach Corp. merged in 1928 Mr. Galen was in charge of details of the merger, and was made secretary.

Congratulations are being received by Mr. and Mrs. DON PEARSON over the birth of their first child, Kristine, born in Bellingham on October 5. Mr. Pearson is a chemical engineer with the Puget Sound Pulp and Timber Co.

JAMES A. PEARSON, the father of Mrs. Lawson Turcotte, wife of Lawson Turcotte, executive vice president of Puget Sound Pulp and Timber Co., died recently. Mr. Pearson, until his retirement, was employed at the Bellingham plant. A native of England, he came to Bellingham 18 years ago at the age of 55.

R. M. GRAFF of Longview Fibre Co., Longview, Wash., was recently promoted from tour foreman to assistant pulp mill superintendent. **G. L. HOLLIMAN** succeeds Mr. Graff as tour foreman.

ALBERT S. QUINN, vice president of Stebbins Engineering Corp., Seattle, and Mrs. Quinn, were preparing for a December trip back to Watertown, N. Y., to visit relatives and business associates.



T. G. BATCHELOR (left), Assistant Director of Sales, Hercules Powder Co., Wilmington, Dela., spent two and a half weeks this fall visiting Pacific Coast pulp and paper mills. **MILTON J. MAGUIRE** (right), District Manager for Paper Makers Chemical Div., Hercules Powder, Portland, Ore., accompanied Batchelor on the Western tour of mills.



OLIVER Lime Mud FILTER

8 Reasons

why it has earned the No. 1 SPOT in Sulphate Mills ...

- ① ... end drainage to double cast-iron head and external flat faced valve.
- ② ... ample cross section of drainage passages which greatly reduces frictional resistance to flow of liquid and air.
- ③ ... design is such as to justify use of extra large vacuum pumps with relatively small filter area, thus providing greatest capacity and lowest area, thus moisture and air.
- ④ ... stainless steel division strips insure long life.
- ⑤ ... removable and renewable cast iron grid screens held in place by stainless steel socket head screws.
- ⑥ ... agitator assembly, driven independently of the drum, can be rotated out of vat for inspection or repair.
- ⑦ ... all parts accessible for scale removal.
- ⑧ ... maintenance minimized because of (1) heavy cast iron cylinder, (2) stainless steel parts, and (3) small area of filter cloth to be cleaned and renewed.

Well in the lead before the war, the Oliver Lime Filter has been the choice of 16 different mills since the war, a total of 19 units being installed or on order since 1945.

When you are in need of a lime mud filter —and order an Oliver—you are getting the lime mud filter with proved durability and efficiency.

OLIVER UNITED FILTERS

New York 18, N. Y.
33 West 42nd Street

San Francisco 11,
California

Sales and Manufacturing Representative:
E. Long Limited
Orillia, Canada

Chicago 1, Ill.
221 N. LaSalle Street

Western Sales Division
Oakland 1, California
2900 Glascott Street

Factories: Oakland, Calif. • Hazleton, Pa. • Orillia, Canada • Melbourne, Australia



I. P. PLANS NEW MILL

To Make Hardwood Dissolving Pulp

International Paper Company is to build, at an as yet undisclosed site in the South, a dissolving pulp mill which will employ hardwoods in a sulfate process. The new kraft mill, to supply woodpulp for rayon and other synthetic products, was announced Nov. 5 by John H. Hinman, president of International, who said that the process would be "entirely new" and that the mill would be "the first in the world designed for the manufacture of dissolving pulp from hardwoods instead of softwoods."

Kraft dissolving pulp was made in the South during the last World War. This brief essay into the kraft dissolving field was to help meet the heavy demand for pulp to make smokeless powder. Wood pulp fired all the medium and heavy caliber guns of the U. S. Army, though not many people even in this industry knew this.

During the war a good start was made toward the commercial production of kraft dissolving pulp as raw material for smokeless powder. Gaylord Container, Bogalusa, La., perhaps progressed farther than others, but the work was largely held to trial and experimental runs. Some detrimental factors were encountered in production, but the pulp was okayed as suitable for nitrating by the military. Because Washington state sulfite mills were producing enough, later on, to take care of war needs it was thought wiser to hold the South's potential in reserve. This Southern production was, of course, from pine and not hardwoods. Actually, this pulp was kraft in a bleached state.

Of course, dissolving sulfite pulp made with Southern pine, has been a product of the South since Rayonier built its Fernandina, Fla., mill. **PULP & PAPER** published the only complete illustrated article on the Fernandina mill in its February, 1940, issue.

Uddeholm in Sweden has for years produced a bleached hardwood sulfate and a hardwood viscose pulp commercially, but visitors to that mill have often been told by Swedish officials that the process would be too high cost in the U. S.

At International headquarters, 220 East 42nd St., **PULP & PAPER** was told that all plans and engineering have been completed and that early 1950 is the period contemplated for completion. Capacity will be 100,000 tons annually, and would increase by 16% the present estimated North American output of rayon pulp. Construction and operation will be under the direction of the Southern Kraft Division, now operating eight International mills in the South.



JOHN H. HINMAN, President of International Paper Co. who announces plans for new dissolving pulp mill in South — to use hardwoods in unique kraft process. In interview with **PULP & PAPER**, he stressed its importance to rayon industry.

Mr. Hinman stated that the development, in addition to being of prime importance to the raw material demands from new rayon yarn capacity, "would be of very substantial importance to the industrial and agricultural future of the South." He pointed out that the kraft paper and board industry has already been of prime importance to the economy of the South.

While he declined at this time to go into detail regarding the new process he stated flatly that it does involve radical changes in the sulfate process, including "novel" methods of purification and bleaching, and "resulting in a pulp which will produce yarn and other end products of superior strength which can be processed more rapidly by the converters, resulting in lower operating costs and saving on capital investment." He claims that the pulp will be particularly adaptable to the production of rayon specialties such as high tenacity tire cord yarn and rubber goods, as well as for high tenacity textile yarns.

The new process was developed by the Southern Kraft Division with the technical advice of Dr. Sigmund Wang, president, Industrial Cellulose Research, Ltd., and his staff. This is a wholly owned research affiliate of Canadian International Paper Co. which operates at Hawkesbury, Ont.

Canadian International Pioneers

Mr. Hinman said that in the development the 28-year operating experience of Canadian International has been fully drawn upon, beginning with the starting of the Kipawa mill at Temiskaming, Quebec, in 1920. Through the expansion of Kipawa and conversion of Hawkesbury and Gatineau pulp mills, Canadian International's dissolving pulp capacity is now 225,000 tons per year. The new Southern

mill is said to be based on this experience. The Southern Kraft division produced dissolving nitrating pulp for World War II, and has pioneered in large-scale production of kraft paper and board and high bleached kraft, utilizing hardwoods in part as raw material.

International's president stressed the effect of use of hardwoods on forest management.

Although the new mill will operate under Southern Kraft Division, whose headquarters are at Mobile, the operating staff will have the assistance of Dr. Wang and other members of the staff of Industrial Cellulose Research, Ltd., on all technical phases of operation. According to Mr. Hinman, no borrowing or securities sales will be required in providing funds for the new mill.

Cullen, IP Board Chairman, Dies

RICHARD J. CULLEN, 73, board chairman of International Paper Co., died November 13 in St. Joseph's Hospital, Phoenix, following an operation for a ruptured appendix. During the past 22 years he had been a winter resident of Phoenix and settled there permanently in 1940.

In addition to interests in IP and its predecessor companies, Mr. Cullen was an official of other papermaking concerns during his career. He was prominent in the affairs of the Catholic Church and was a member of the Knights of St. Gregory, an honor conferred upon him by the Pope. With him at the time of his death was Mrs. Eleanor Cullen.

I. P. Opens New Sales Office

International Paper Co.'s Bagpak Div. has announced the opening of a branch sales office in San Francisco. W. A. Scholl will be the district sales manager. The San Francisco office will be Bagpak's second branch sales office in California, the other, is located in Los Angeles with Frank N. Gladden as district sales manager.

Bagpak Division makes heavy-duty multi-wall kraft paper shipping sacks used by the cement, fertilizer, lime and limestone, food products, chemical, and other industries.

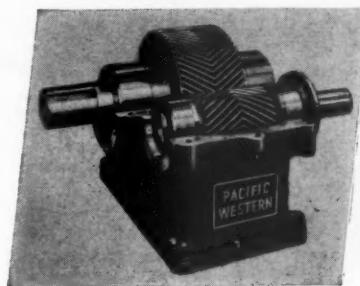
Machine at Tuscaloosa

Gulf States Paper Corp., at Tuscaloosa, Ala., expects to have its new paper machine in operation in December, the start-up being scheduled for around the first of the month.

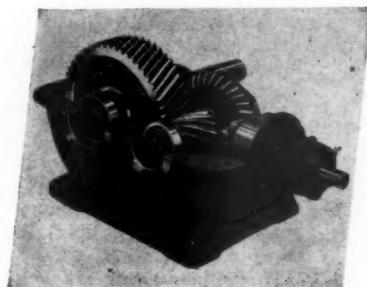
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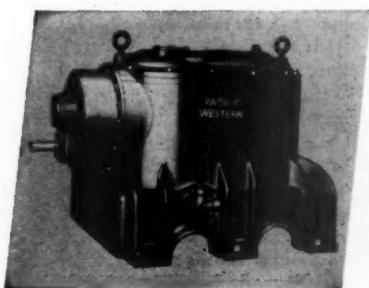
**Gears of all types
and sizes**



**Single-reduction
speed reducer**



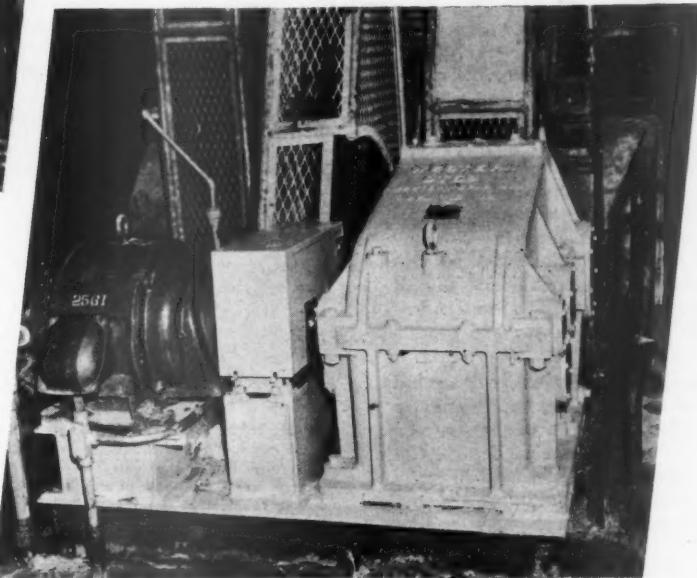
**Right-angle
speed reducer**



**Vertical-shaft
speed reducer**

**GOOD
GEARS
FOR
OVER
50
YEARS**

Crown Zellerbach Corporation selected Pacific-Western speed reducers for such grueling jobs as this digester drive at the modernized Camas mill.



IN CAMAS TOO, IT'S PACIFIC-WESTERN SPEED REDUCERS

Scenes like the one above are typical in the pulp and paper mills of the northwest, where thousands of Pacific-Western speed reducers are in service. Many of them have had over fifteen years of almost continuous operation. Such popularity results from their proved reputation for efficiency, long life, and low maintenance cost, backed by the complete mechanical power-transmission service available at our three conveniently located west-coast plants.

Our line includes Reeves variable-speed units, Pacific, General Electric motorized, speed reducers, Cone gears and reducers, and the popular Pacific-Western speed reducer and high-speed units. We design and cut all types and sizes of gears, and build special gear boxes and geared machinery.

Fast delivery on many types and sizes of speed reducers from stock. Let us quote on your needs.

Write, wire or phone our nearest plant or office for complete information.

WESTERN GEAR WORKS, Seattle 4, Washington
WESTERN GEAR WORKS, Box 192, Lynwood, California
PACIFIC GEAR & TOOL WORKS, San Francisco 3, California
SALES REPRESENTATIVES: Portland . . . Salt Lake City



PACIFIC GEAR
& TOOL WORKS

WESTERN
GEAR WORKS

PACIFIC-WESTERN

GEAR PRODUCTS

A GREAT SPECIALTY MILL EXPANSION AT CAMAS

At Camas, Washington, 120 miles up the Columbia River from the sea, almost every important process in pulp and paper making can be seen.

Save for a new wood preparation plant, on which work has commenced, a multi-million dollar postwar expansion at this largest Crown Zellerbach mill is now completed. And as a result, Camas has become—more than ever before—one of the most highly diversified operations at one locale to be found anywhere in this industry.

In Crown Zellerbach's recent annual report it was announced that this company has invested \$50,000,000 in expansion and improvements, plus timberlands, in the past three years, and will spend another \$15,000,000 on additions and improvements of properties in the fiscal year ending April 30, 1949. Of this total of \$65,000,000, it might be said that a "lion's share" went into expansion at Camas. Next to Camas, the greatest investment in expansion and improvements in the Crown Zellerbach organization was made at West Linn, Ore., and these were described in an illustrated article in the June, 1948, issue of **PULP & PAPER**.

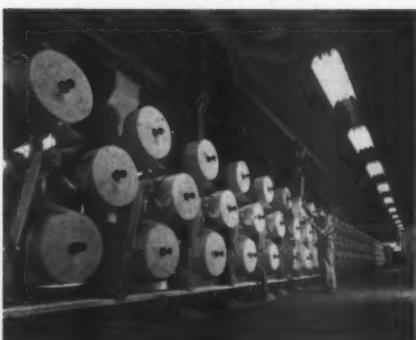
What Has Been Accomplished

Six important things have been accomplished in the work now completed at Camas:

1. Equipment and processes have been introduced which have placed the company in the field of high grade bleached kraft specialty papers.

2. Similarly, it has entered the field of facial tissue products with the first machine making facial tissue west of Wisconsin.

THIS MINIATURE of our cover picture shows one of the most amazingly intricate converting machines ever made for the paper industry. It is a Paper Converting Machine Co. facial folding machine—the longest and biggest machine of this type ever made with 3 decks of rolls and 130 parent rolls, each parent roll having its own small former.



CAMAS, WASH., MILL AIR VIEW taken after all construction described in this article had been completed. Current work on new wood preparation plant is at extreme upper left in the picture. The curved white roof on the high building at extreme right center is the new, unusual bleach plant. The new kraft mill and power house are in about the center of the mass of buildings and the new No. 15 machine room is in the foreground.

3. The Camas mill is now able to use some Douglas fir and other fir thinnings, second growth and so-called salvage wood, which means that to an important extent its hemlock and spruce stands can be conserved for the future.

4. It has appreciably expanded producing capacity in both pulp and paper, and, with work continuing on several of its machines, it can now see the light ahead to becoming a 700-ton pulp and paper mill, with 100% conversion of all its pulp. It still has not attained that goal in paper, although it has pulpmaking capacity substantially over that mark.

5. It has taken further long strides toward complete integration through to finished products, with some of the most modern facial converting, waxing and other converting equipment now installed.

6. About 150 jobs have been added in various parts of the mill, bringing total Camas employment to 2,400 persons, earning annual wages totaling pay \$6,250,000.

With the completion in early spring of 1949 of the new wood preparation plant, with two hydraulic log barkers and other modern equipment, there will be one more important achievement to record:

7. A 5% to 7% saving in wood. That much pulp will be made from every log that enters Camas Slough, which means equivalent further savings back in the forest.

Variety to the Nth Degree

At the outset of this article, we described Camas as one of the world's most diversified operations. The Crown organization itself has felt justified in calling it one of the "largest specialty mills in the world." Years ago it was the biggest newsprint mill in the West, but now it makes almost everything except newsprint.

Until the recent expansion, it had a 16-grinder 55-ton groundwood mill, a 10-digester 340-ton sulfite mill, a 5-digester 185-ton kraft mill, and a 180-ton sulfite bleach plant. To this has been added another 5-digester 165-ton graft mill with kraft bleach plant of 150 tons capacity.

In the paper mill there were 13 machines—eight Fourdriniers, two Yankees, two Harpers and a pulp drying machine—ranging in width from 188 and 176 inches down to 86 inches. Now there have been added a 100-inch Fourdrinier Yankee which has been making facial and other soft tissues since mid-December, 1946, and a 152-inch "all-purpose" Fourdrinier which makes a wide range from heavy board to lightweight specialties and started up April 18, 1948.

To the converting plant, bag plant and other finishing departments have been added the most modern of waxing and household roll converting equipment in the industry, some unique facial converting equipment and other converting machines. As a result, this mill now makes over 200 different kinds of paper with over 1,000 color and weight specifications.

But the most significant fact of all, perhaps, is that this whole program has put an amazingly large proportion of Camas products into the less competitive, higher quality markets with facial and kraft specialties and waxed papers augmenting coated papers, toilet, napkin, fruit wrap, gumming, tabulating, envelope and other papers made here.

To emphasize the great variety of operations at this site, from wood room to converting, just consider two of the recent major additions:

The new eight-stage continuous kraft bleach plant—most extensive bleachery ever built—has an intricate list of schedules for varying treatments of different

kinds of wood or for achieving varying results in color, wet strength, etc.

The newest of the two new paper machines has speed ranges from 150 to 1700 ft. per minute and when recently observed by **PULP & PAPER** was making the first milk bottle stock ever made by this company on a Fourdrinier. But this is only one of many specialty products it can make.

What Remains to Be Done

Unlike the big pulp mills of the Far West, whose modernization programs began in the wood rooms and were worked through to pulping and bleaching processes, the Crown Z postwar betterment program started at the other end—in converting and papermaking.

Except for some further speeding up and improvement of its older machines, the only important remaining project at Camas is the new wood room. It is probably quite logical that the Crown Zellerbach management, whose working capital was listed as \$45,357,000 last April 30 and whose sales were \$153,396,000 for the year ending that date, should emphasize the paper and conversion end. (Their sales were second highest of any company in the industry for the last fiscal year reported. International Paper reported \$405,248,000 in 1947 and St. Regis \$143,865,000 for that year. But St. Regis reports \$83,907,000 for the first six months of 1948, giving them, according to our calculations, \$158,739,000 for a year ending July 3.)

As the Camas management now builds its new wood preparation plant, it has the benefit of all the pioneering experience of the other Pacific Northwest mills in their development of hydraulic log barkers. What Camas will install are two of the so-called Bellingham-type barkers made by Sumner Iron Works from the patents held by Puget Sound Pulp & Timber Co., but with a few variations devised by the Crown Zellerbach engineers. For one thing, the water jet will always be radial to the log—directly above it—instead of at an angle. (Complete, illustrated description of Bellingham barker in Oct., 1947, issue of **PULP & PAPER**). Water pressures of above 1300 lbs. per square

inch will be used, and both barkers at Camas will be able to handle logs up to 84 inches in diameter and 24 ft. long, but actually smaller logs will be fed to one barker and on to a 110-inch chipper, while larger ones go through the other barker and on to a 153-inch chipper. There will be a one-man head rig and twin band rip saw for this wood plant. The sawmill will be on Monotube piling and have concrete floors, above the basement floor the building framework will be of steel, and the siding and roof will be of corrugated asbestos. The finished area will cover 44,000 square feet of ground area.

A chip screen room and four big concrete chip storage silos will be built, each capable of holding 400 units of chips.

With construction of the new wood room some distance west of the old one, enclosed chip conveyors will extend over approximately one-half of a mile with the farthest east terminal over the sulfite mill.

What Has Been Done

Perhaps the logical way to describe the expansion at Camas is to describe it under the following subject headings, and in this order:

1. New kraft pulp mill.
2. New kraft recovery and power plant
3. New kraft screen room.
4. New kraft bleach plant.
5. New paper machines.
6. New finishing and converting equipment plants.

For the new bleach plant the company brought in four new wells near the Washougal River, each of 2200 gallons per min. capacity and providing an additional 12,000,000 gallons per day of water. A 30-inch enamel pipe line brings this water to the bleach plant.

Piping and Electric Distribution

The kinds of piping chosen for stock distribution and the extensive distribution system are other important sidelights on this expansion. For the first time, the Camas mill uses Johns-Manville Transite piping for most stock lines and there are several miles of this. In the bleach plant, the screen room and in connection with new paper machine, some considerable stainless steel piping and fittings of No.

304 type were installed. Transite piping is also used for the white water system in the bleach plant. As previously indicated, bitumastic enamel coating was used for regular water lines. A considerable amount of steel pipe, rubber-lined, is used in the bleach plants for chlorinated stock and effluent with chlorine.

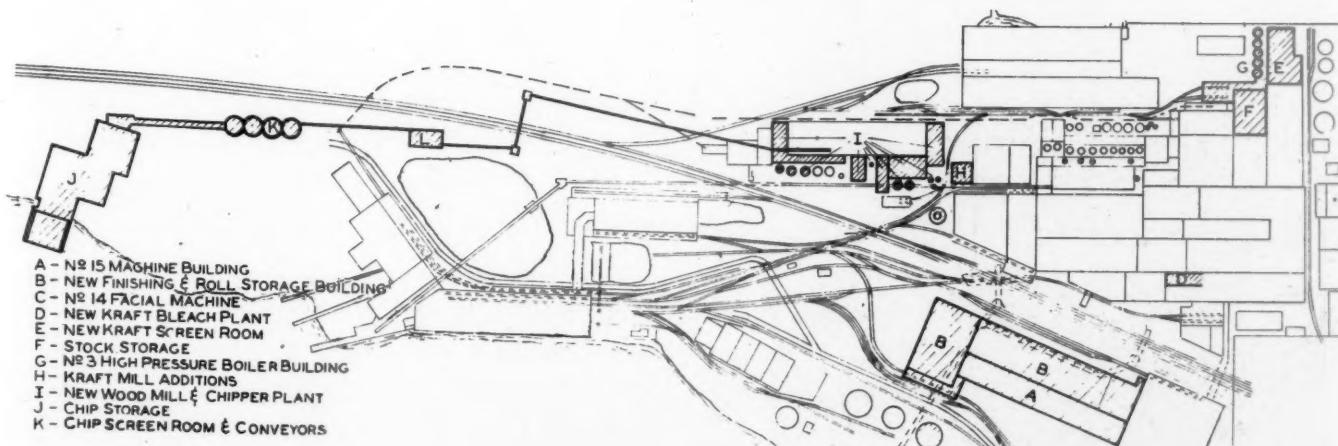
Another important sidelight is that the Camas mill has inaugurated a new electrical distribution system with the installation of a new sub-station for stepping down voltage from 66,000 to 7,200 volts. This is an innovation for Camas to go into voltage distribution up to 7,200 volts to the various sections of the mill. Capacitors were installed to improve the power factor system at the various load centers and voltage is stepped down further from 7,200 to 550 and 2,300 at the load centers.

NEW KRAFT PULP MILL

The new 165-ton capacity kraft pulp mill is supplying pulp to the new bleach plant, while the old 185-ton kraft mill continues to produce for the unbleached paper production.

Five new 4½ ton capacity rotating digesters of a new type have been supplied by Babcock & Wilcox Co. They are stainless steel lined by the Croloy resistance-welding process and Type 405 stainless steel is used. Digester drives are reduction-gear units with spur-gear drives, differing from the older worm-gear type, and they were supplied by Western Gear Works of Seattle.

A time-cycle pressure control system for these digesters, devised by the Camas staff with the assistance of Foxboro engineers, has attracted wide international interest in this industry. A time cycle cam is operated by a four-hour clock. A linkage system from cam rider continuously re-positions a control arm of the pressure controller according to predetermined cycle. A typical diaphragm valve is operated by the controller. Digester pressure is transmitted to the recorder through an iron pipe inserted through the trunnion and rotating with it. A balanced packed joint joins the rotating pipe to the stationary system. The pipe in the trunnion must occasionally be flushed by high



pressure water. A very simple system, this control has already proved highly satisfactory.

New Blow Heat Recovery

Two new steel blow tanks with agitators have been provided. The Swenson Evaporator Co. designed and supplied the digester blow heat recovery system. The cold inlet water is supplied to the surface condenser by gravity flow. The hot water is used for the pulpwashers.

Unique Consistency Regulators

Before the pulp is processed in the new building housing knotting and washing, it passes through new consistency regulators developed by the Camas kraft mill superintendent, L. D. McGlothlin, whose close controls are credited with making for better screening and washing. Stock flows in the bottom and is pumped out the top of a closed tank. The amount of black liquor for dilution is controlled by the power input to the agitator drive.

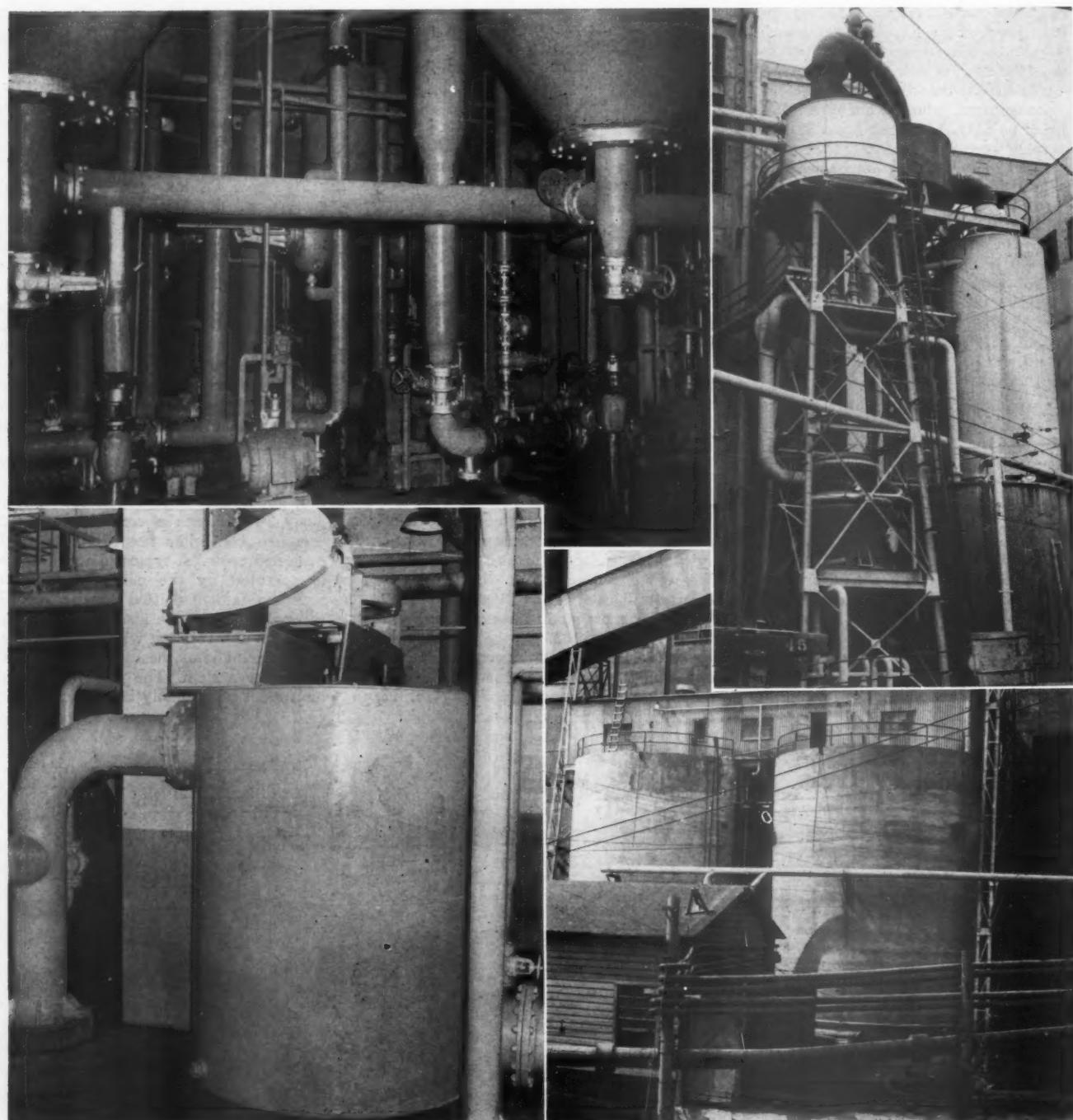
This dilution is distributed through branch inlet pipes at different levels, each controlled by a hand valve. Dilution from blow tank to washers is about five-fold.

A series of baffles in pairs at different horizontal levels form two vertical rows inside the tank, each baffle supported by a brace attached to the wall. On a vertical shaft in the tank, paddle blades in pairs form horizontal cross arms. Each pair of blades is below a pair of stationary baffles. Due to staggered angular relationships of paddles, no two come in vertical align-

SPECIAL EQUIPMENT AT CAMAS includes: Upper Left—Swenson evaporators in the kraft mill showing liquor pumps with Allis-Chalmers motors and automatic control valves.

Upper right—Digester blow heat recovery condenser supplied by Swenson Evaporator Co.

Lower left—Kraft Supt. McGlothlin's consistency regulators. Lower right—High density stock storage chests.

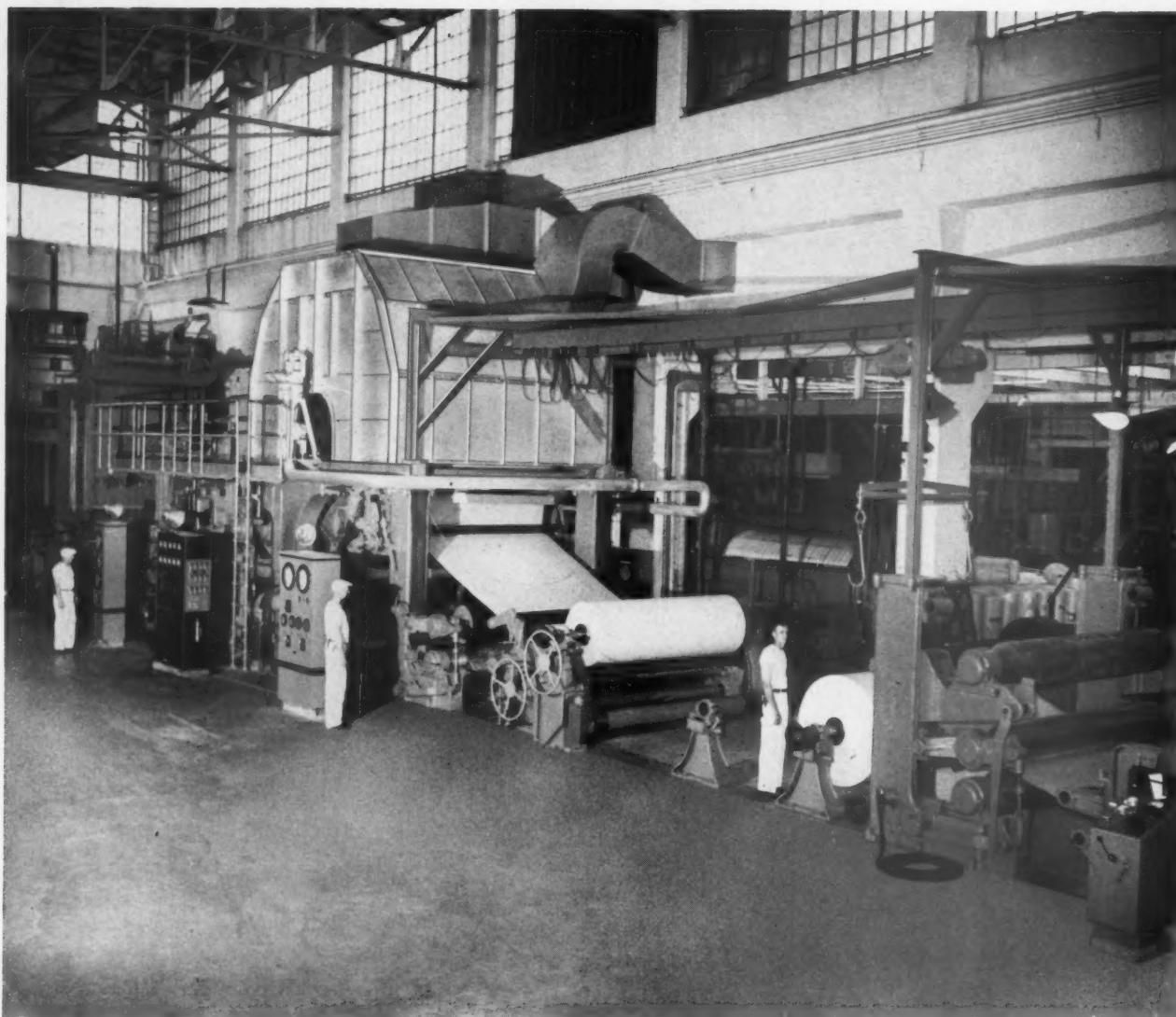


SALUTE



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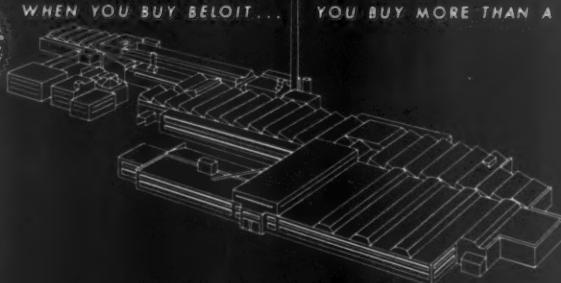
B E L O I T I R O N W O R K S , B E L O I T , W I S C O N S I N



Crown Zellerbach's expanded and modernized mill at Camas, Washington, includes this high-speed Beloit Yankee Fourdrinier—a new unit contributing new products to the extensive Camas line.



WHEN YOU BUY BELIOT... YOU BUY MORE THAN A MACHINE!



BELIOT IRON WORKS, BELIOT, WISCONSIN

ment with baffles at any time. Stock is not only mixed in a rotary motion but is moved upward, while liquor is admitted as desired. A gear motor rotates the shaft.

Screening and Washing

Pulp then proceeds to the first installation ever made on kraft stock of a new Allis-Chalmers high density knotter screen vibrated by an eccentric device and screening pulp at about 1-1½ density. There are four of these screens. Knot rejects are then conveyed by a Stephens-Adamson closed Redler-type conveyor system back to the chip bins and are re-cooked.

This knotting is done ahead of the washers and is said to make for better washing and recovery of fiber with the knots. Knotters ahead of washers is an arrangement which is apparently being universally adopted in all new mills.

The pulp to be bleached is washed on the new, two-drum, four-stage Swenson-Nyman pulp washers which are provided with variable speed drives. For the pulp cooked in the old kraft mill, an old Impco washer and a newly installed Oliver 8-ft. by 16-ft. washer operate in parallel, each providing 2-stage washing. Hoods for these washers are furnished by Drew Engineering Co. of Portland, Ore.

High Density Pulp Storage

After pulp destined for the bleach plant has been washed, it goes to the first density storage chests to be built in

the West. High density storage of pulp is one of the new important trends in the industry and so far there have been a couple of interesting examples of it in the South. They give greater flexibility to pulp mills, by permitting the production and storage of certain kinds of pulp until it is wanted for further processing.

At Camas, there are two 100-ton capacity concrete high density chests just outside the washer building. Thus, for example, 100 or 200 tons of fir or cottonwood pulp or other pulp, can be cooked and then stored temporarily while, say, hemlock pulp is being processed at the bleach plant.

Stock goes into storage at about 14% density. Conveyors transporting stock to storage run in tile-lined troughs instead of being supported on the customary troughing rolls. When it is desired to move the stock in to the bleach plant, it is diluted. High pressure pumps put water in the bottom of the big storage chests from fixed nozzles while a high pressure moveable nozzle at the top starts the stock moving to the new screen room ahead of the bleach plant.

CHEMICALS AND POWER

Liquor from the new kraft mill goes to a sextuple effect Swenson evaporator. Stainless steel tubes are in the first and second effects, while the other four use welded steel tubes.

A new 100-ton Babcock & Wilcox Tomlinson recovery unit has been installed,

which shares the load with the old 150-ton furnace of the old kraft mill. The new recovery furnace boiler is designed for 650 p.s.i., has rated capacity of 104,000 lbs. of steam per hour and is fully automatically controlled.

Interesting feature of the new unit is that the flue gas duct from the furnace is divided into two ducts leading to two disc evaporators and then on to be united again at a header. The reason for this is that there was serious doubt as to whether a single disc evaporator of the required large size for a single duct would be efficient. With two smaller disc evaporators no center bearing, where black liquor would gather, would be necessary.

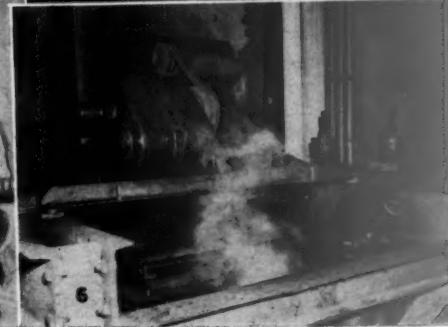
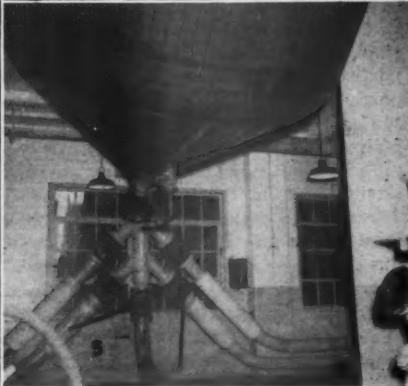
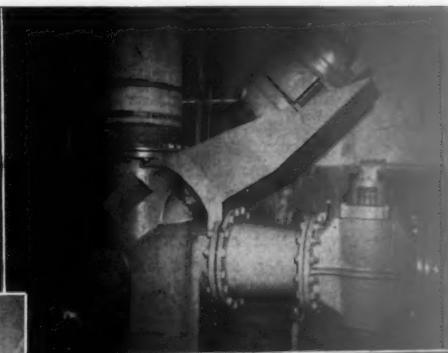
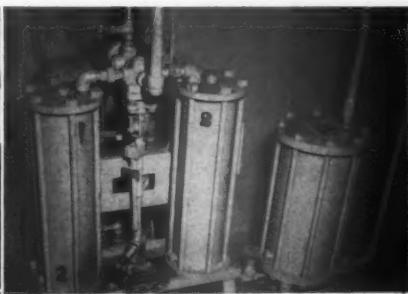
Combined gases from the new and old disc evaporators pass on to the Western Precipitation Corporation Cottrell precipitators. A new precipitator unit has been added to give two and one-half times the previous gas treating capacity. The exit gases from the precipitators pass to a common stack.

A new rotary type Allis-Chalmers lime kiln, 120 ft. long and 8 ft. in diameter, is equipped with a lined dust collector. In the feed end of the kiln is a patented system of chains, spirals and hangers weighing several tons which minimize the carry-over of lime dust. This, of course, is aimed to give more heating surface and to lower the temperature of flue gasses for improved efficiency. The kiln is driven by a four-speed motor.

There are Fuller "Airveyor" units for unloading both bulk lime and salt cake

BLEACH, SCREENING AND KRAFT EQUIPMENT AT CAMAS:

- 1—Top floor in kraft bleach plant with view of Improved Paper Machinery Co. washers, showing unusual dome roof without any impeding pillars; also showing Westinghouse control panels, glass brick walls, fluorescent lighting and ventilating outlets.
- 2—Lectrodryer (made by Pittsburgh Lectrodryer Corp.) on basement floor of the kraft bleach plant.
- 3—IMPCO angle pump powered with Allis-Chalmers 15 HP motor, delivering stock to secondary hypochlorite stage in kraft bleach sequence. A DeZurik 3-way valve at right, used throughout in bleaching sequences.
- 4—Sumner Iron Works couch decker with powered top pick-up roll, and tile-lined vat in new kraft screen room.
- 5—New Babcock & Wilcox 4½-ton, rotary tumbling digester in kraft mill.
- 6—New type of Allis-Chalmers knotting screens in kraft mill, operates horizontally—saves on headroom and space.



from railroad cars. Airveyors are by Fuller Co. of Catasauqua, Pa. These systems operate like vacuum cleaners, sucking into the system the lime or salt cake and through concrete passage carry them all the way to the tops of the buildings and into storage, handling 18 to 20 tons an hour. It consists mainly of suction intake pipe, cyclone airlock and exhauster. The one for lime is at the top of the old sulfite bleach plant and serves both the sulfite and kraft bleach plants.

There is quite a bit of new equipment along with some old, in the causticizing plant. A Kilby slacker, Dorr slackerclassifier, two Oliver sludge filters operating in series, Dorr green liquor clarifier and one additional decanter for white liquor and white and green liquor storage tanks are new. Lime is fed continuously into the Dorr slacker classifier.

KRAFT SCREEN PLANT

The new screen plant is a 3-story building. The first floor is entirely taken up by four, tile-lined stock chests, each of 30 tons capacity lined by Kalamazoo Tank & Silo Co. These chests have propeller-type agitation and pumping system of four individual circulating lines to the paper machine beater rooms. These chests handle different grades of bleached stock coming from the bleach plant.

On the second floor are four chests. Two are receiving chests which receive brown stock from the high density storage. The other two are for screened and deckered brown stock prior to distribution to the kraft bleach plant.

On the top floor are the screens and deckers. There are six lines of SmithValley type flat screens made by Western Machinery Corp., Portland, Ore., each line having three 14-plate sections. They are arranged with three lines for primary screening, two for secondary and one for tertiary. Provision is made for installation of two additional lines when they may be required. Three Ingersoll-Rand vertical pumps driven by GE motors move stock over the screens.

There are four couch-roll deckers, each 48 inches by 132 inches, made by Sumner Iron Works and equipped with tile lined vats made by Kalamazoo Tank & Silo and this type of vat is a new departure for the Camas mill.

All fittings in this new section of the mill are stainless steel. Motors are General Electric and range up to 100 hp. with Western Gear reducers.

KRAFT BLEACH PLANT

There is no doubt but that the new, 150-ton eight-stage bleach plant for kraft pulp at Camas, with its dome roof, and its numerous features for achieving quality, convenience, uniformity of product and safety, is one of the outstanding new "showplaces" of this industry. From far and near, industry men want to see it.

Improved Paper Machinery Corp., Nashua, N. H., provided major equipment and collaborated with the Crown Zellerbach engineers in design. This is a continuous type bleachery and the 100%

open character inside the building—achieved by elimination of vertical structures on the operating floor—and the glass brick windows, fluorescent lighting, etc., provide a most pleasing plant.

The eight stages—seven chemical and one soak stage—are:

1. Low density chlorination.
2. High density caustic (for hemlock) or hypo chloride (for fir).
3. Agitated soak.
4. Low density chlorination.
5. High density caustic.
6. High density hypochlorite.
7. Low density hypochlorite (with 2 cells in tandem).
8. SO₂ stage.

The building has a "smooth arched ceiling" of rigid frame design to avoid central supports and help keep the openness inside the building. The building is 95 ft. high and 66 ft. wide.

Washers, arranged in two rows over the cells, are covered with Plexiglas hoods and the J. O. Ross Engineering Corp. indirect ventilating system takes fumes from under the hoods to ducts underneath the floor. No canopy is needed over the washers. There are horizontal vents at the sides of the building and so, again in this way, vertical obstructions on the operating floor are avoided. The Plexiglas is clean-appearing and easy to keep clean. The idea originated with the Improved Paper Machinery Corp. and has been introduced in other mills, in the Middle West in particular.

Operation Centralized

Operation centers at a top floor central panel. A system of interlocks provides safety, the most important being a chlorine flow cutoff when stock to towers is interrupted. But the whole system is electrically interlocked so any trouble in one spot will automatically result in "kicking out" vital equipment behind it and prevent spilling over.

The intricate by-pass arrangements for the operation on different bleaching schedules are regulated with the use of DeZurik Shower Co. rubber-lined three-way valves. Remote operated control valves are Hills-McCanna valves, rubber lined. There are different bleaching schedules or sequences for achieving different quality pulps or for treating different species of wood or combinations of wood.

There are 3 caustic storage tanks 17 ft. in diameter by 22 ft. high and made of steel, and Treet-O-Unit automatic proportioning pumps made by Percent Proportioners, Inc., Providence, R. I., mix soda and water to designated strength and pumps from one to the other of these tanks. Dilute caustic of any required strength is automatically provided by Percent Proportioners, Inc. This caustic diluter consists of a Treet-O-Unit metering pump for concentrated caustic regulated by a Treet-O-Control meter in the dilution water line. Strong caustic is stored in two sealed tanks and the Treet-O-Unit is arranged to take suction from either tank. A third tank is used for storing the

diluted caustic which is continuously and automatically produced.

High density towers are of the Thorne type with bottom extraction and dump chest for dilution ahead of the washer. The low density towers are of the upward flow type with vertical agitation and overflow at the top. The cells are arranged in two parallel rows with all high density on one side and all low density on the other. This permits a more compact process with savings in piping and construction and makes operation more convenient.

High Density Storage

In connection with the bleach plant, as at the new kraft mill, there is another interesting installation for high density stock storage. Five concrete, cone-bottom stock chests, tiled (tile-lined) by Kalamazoo Tank & Silo, have been built in line along one side of the bleach plant. Unlike the storage chests at the kraft mill, these are tile-lined and their cone-bottoms are a point of difference, too, as those at the kraft mill are flat bottomed. Each one at the bleach plant will hold 75 tons of stock at 15% consistency. Here again, this storage permits flexibility.

The point is in both cases that in such a tremendously big and complicated operation as the Camas mill, with many varieties of products, the storage permits a continuation of one schedule or process without too many change-overs in either kraft mill or bleach plant.

Water jets are being used to obtain dilution at the bottom of storage chests and fittings are installed for power-driven agitators in the cone sections if that is found necessary.

An American Brass & Iron Works compressor furnishes compressed air for unloading chlorine from tank cars for the bleach plant. The air goes through an Lectro-Dryer supplied by Lectro-Dryer Co. of Pittsburgh, which takes moisture out of the air and prevents corrosion in the chlorine system.

Cleveland Worm & Gear drives serve the Impco chemical mixers. Ingersoll-Rand and Worthington centrifugal pumps, GE motors and Falk reducers are other equipment in the plant. A DeZurik consistency control and an Impco volumetric rate of flow controller are used to control the flow to the bleach plant.

All chemicals are controlled with Fischer & Porter rotameters. Foxboro instruments control temperatures and levels and a Foxboro tachometer "potentiometer" records the rate of production—tons per hour—through the plant.

PAPER MACHINES

As previously stated, two new machines bring up to 15 the number of machines making paper now at Camas and they greatly increase the types of paper that may be produced. Both machines were manufactured by Beloit Iron Works.

No. 15, which started up in April, has been especially designed for a variety of specialty grades. Ahead of it are a series of five Morden Stock-Makers and a battery of four E. D. Jones & Sons Majestic Jordans. As this refined stock reaches the

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PORTLAND, OREGON

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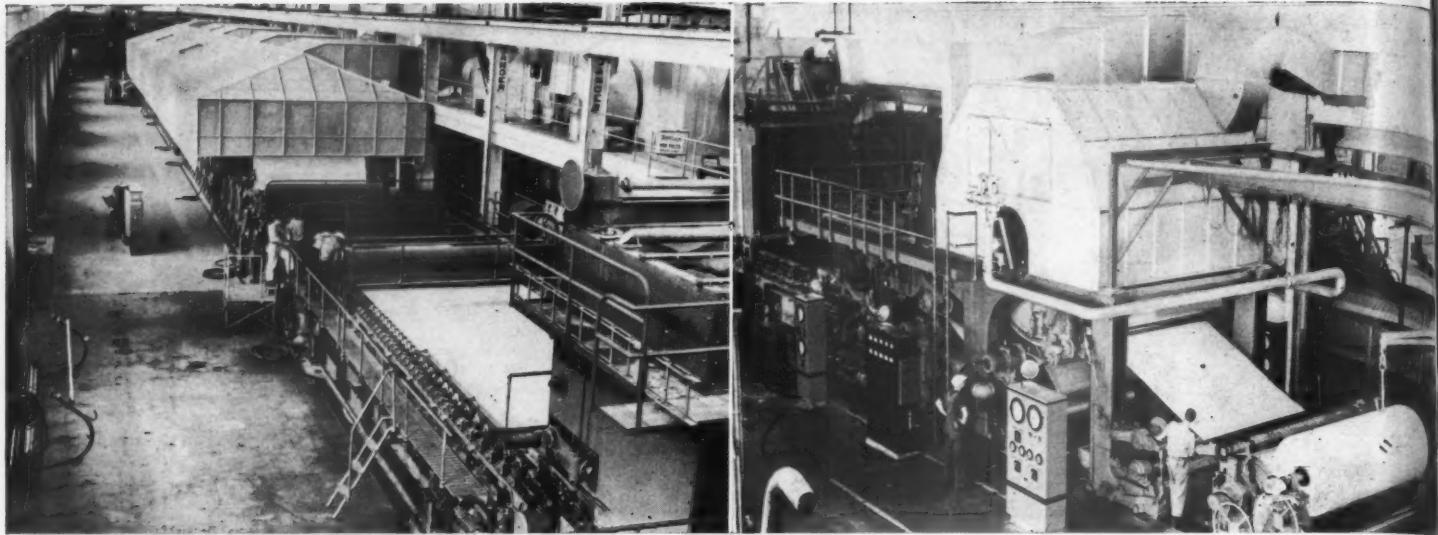
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Industrial Buildings FOR CROWN-ZELLERBACH CORPORATION

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MILL F	West Linn
BLEACH PLANT	West Linn
COATING PLANT	West Linn
LIME KILN	Camas
CAUSTICISING	Camas
BLEACH PLANT	Camas
SCREEN ROOM	Camas
LUNCH ROLL BLDG.	Camas
SCREEN ROOM	Camas
BOILER HOUSE	Camas
TOMLINSON FURNACE	Camas
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NO. 15 MACHINE BLDG.	Camas
WOOD MILL	Camas

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Hudson Motor Sales Co.	Warehouse
National Biscuit Co.	Portland Plant
Fibreboard Products Co.	Portland Plant
First National Bank of Portland	Salem Bank Building
U. S. National Bank of Portland	Portland Metropolitan Branch
Pacific Power & Light Co.	Portland Office Building
Aluminum Co. of America	Vancouver—Plant Cafeteria
Aluminum Co. of America	Vancouver—Fume Control Plant



THESE ARE TWO NEW BELOIT MACHINES at Camas. At left is the 152-inch, No. 15 "all purpose" machine. It has General Electric drive and pressure headbox with J. O. Ross Engineering Co. hood. (Right) is No. 14, 100-inch facial tissue machine with a 12 ft. dryer, G. E. drive and a Ross hood. Drew Engineering Co. provided an elaborate dust-collecting system for this machine and also a Hi-Jet system for dryers on No. 15 machine.

machine it passes through a consistency regulator supplied by Control Equipment Co. of Kane, Pa.

Many special features were incorporated into the design of this machine, it has a speed range from 150 to 1700 feet per minute, it is fitted to make many kinds of products from heavy board to lightweight kraft papers—a truly phenomenal potentiality. Many of the latest features developed for paper machines are found on No. 15. The machine system is all tile-lined with no place where any corrosive metal touches stock. Wood, stainless steel, Transite piping are used and all chests and pits are tile-lined.

Headbox is adjustable for pressure formation and is equipped with a standard slice as well as secondary slice. The machine is 152 inches wide and the wire is 105 ft. long with adjustable pitch and has a primary suction couch ahead of the main suction couch. The press suction is comprised of two suction presses and one smoothing press. The dryer part consists of a total of 44 paper dryers and 6 felt dryers, all 60 inches in diameter and designed for 75 lbs. operating stem pressure. The dryer part is divided into three sections, each complete with felt handling equipment. A marking or smoothing press unit between the first and second dryer sections, and a size press unit between the second and third dryer sections. Two open-side calender stacks, each having eight rolls are provided. These are followed by heavy duty reel suitable for winding rolls up to 72 inches in diameter.

The machine is equipped with a Beloit mechanical drive, each section being fitted with a hypoid gear unit having an air operated clutch and motor driven belt shifter. The dry end sections are fitted with quick take-up devices. The basement line-shaft is driven by a General Electric electronically controlled single motor of 900 h.p. size, 600 volts D.C. In addition, two helper motors are used, one at the primary couch and one on the main

couch, the control of which is entirely automatic. Probably the most noticeable feature of the entire machine is the automatic control equipment. It is really a push-button job from the slice adjustment to the reel transfer.

A 143" Cameron Machine Co. winder follows the machine and is designed for speeds up to 4000 ft. per minute.

A pneumatic sampler conveyor takes samples right to a constant humidity controlled testing station in another building across railroad tracks. This modern conveyor for samples "a la department store" pneumatic tube system is a new feature throughout the operations at Camas. Steam and condensate system is supplied for No. 15 by Midwest-Fulton Co. A mezzanine floor is built for the machine room heating and ventilating equipment furnished by Ross Engineering Corp., who also designed and installed the hood and exhaust system. Drew Engineering Co., Portland, Ore., engineers, provided a Hi-Jet system for the dryers.

The selection of a location on which to construct the building for this machine presented a problem. It was decreed that this aristocrat of paper machines was to be domiciled in an exclusive district on the south side of the railroad tracks.

One of the biggest fan pumps made for a paper machine serves No. 15. It was made by Worthington Pump & Machinery Corp. A 30-ton crane services the entire machine room, and a 7½-ton crane handles paper rolls between the reel and winder. Both cranes were furnished by Ederer Engineering Co. of Seattle. The following Nash pumps were used in connection with the machine: one L7, one L8, and six L9's. An 8 ft. 6 inch diameter by 11 ft. disc American Saveall was furnished by Oliver United Filters, Inc.

No. 14 Machine

The new No. 14 machine was especially built by Beloit Iron Works to make the first facial products on the Pa-

cific Coast and also for other soft tissue products. It has a 100-inch wire and operates up to a speed of 1700 ft. per minute.

Ahead of this machine are two E. D. Jones & Sons pony jordans and a Control Equipment Co. consistency regulator. Like No. 15, it has many of the modern machine features. It has a big, high pressure Yankee dryer, 12 ft. in diameter. The General Electric drive is electronic, remote controlled, with the main drive at the Yankee dryer and helper drives at couch, press and other positions. Special drive control is provided at calender and reel. The Beloit winder, tissue type, has its own separate drive arrangements, with special mechanical connecting drive to an additional calender located at the winder position.

Drew Engineering Co. engineered one of the most elaborate dust collection systems on any machine for this operation. This safeguard for cleanliness is an important feature of a facial machine room.

There is a Ross hood and Yankee vapor absorption system on the machine.

This machine has been in operation for sometime on sulfite and will always chiefly run sulfite, but it is planned eventually to run some bleached kraft on it.

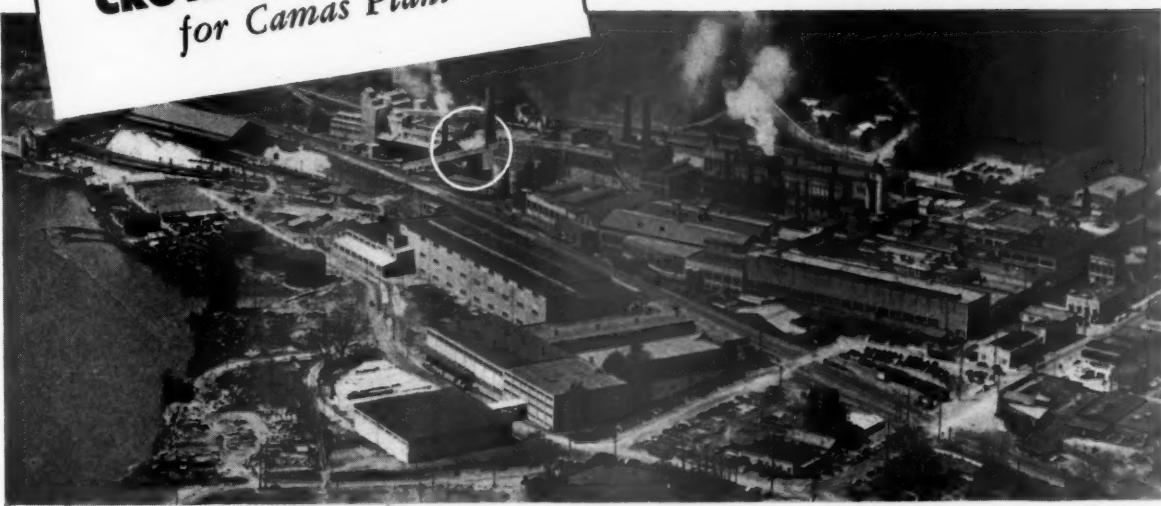
No. 10 machine at Camas has also undergone considerable speeding up and modernization, making it much more efficient. Several other machines are down on the program for modernization work.

FINISHING AND CONVERTING

The modern trend toward integration of the paper industry from the tree right through to marketable consumer products, is exemplified in striking manner at Camas. Even before the present program of expansion, there was already a great variety of finishing and converting equipment from fruit wrap machinery to a sizable bag plant.

One of the important changes was building of a No. 2 finishing room adjacent

Western Precipitation
COTTRELL
again selected by
CROWN-ZELLERBACH
for Camas Plant



New Camas recovery unit one of many successful Western Precipitation paper installations...

WESTERN PRECIPITATION is the organization that—more than 30 years ago—pioneered the first successful application of COTTRELL equipment for collecting soda ash from the recovery furnaces in paper plant operations. And through the years Western Precipitation has continued its leadership in COTTRELL installations with one important development after another.

One of the latest Western Precipitation paper installations is the COTTRELL unit recently completed for Crown-Zellerbach for their kraft plant at Camas. This COTTRELL, recovering soda salts from the black liquor furnace gases, is only one of the Western Precipitation COTTRELL units chosen by Crown-Zellerbach for their paper mills.

In fact, at the Camas plant itself another Western Precipitation COTTRELL unit has been in successful operation for some 8 years, and the success of this installation was an important factor in the decision of Crown-Zellerbach to again install a Western Precipitation COTTRELL in the newly completed expansion to their Camas kraft mill operations.

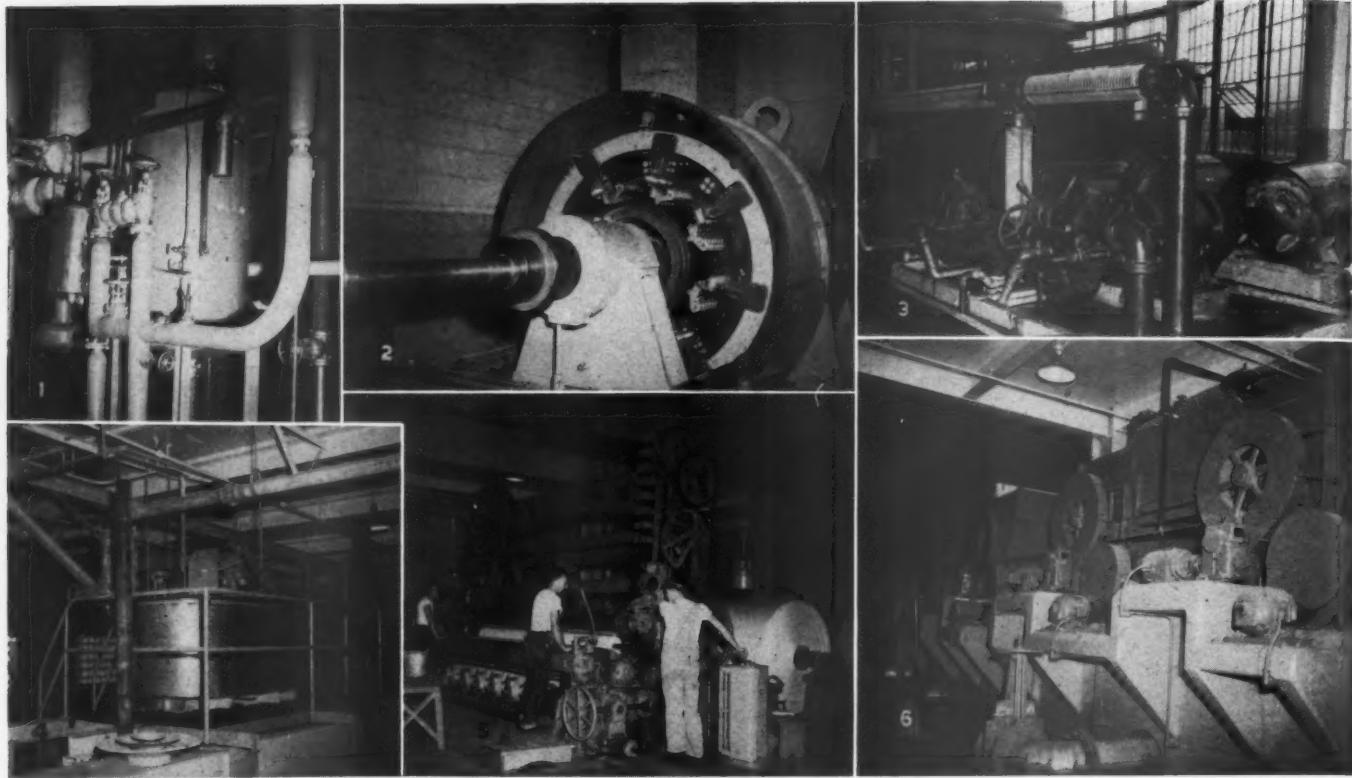
Throughout the paper industry many other companies have also selected Western Precipitation COTTRELL equipment for their kraft mill recovery units, and the invaluable experience gained through the years by the Western Precipitation organization in this specialized field can be helpful to any paper plant contemplating installation of recovery equipment. Let our engineers study your particular requirements and make recommendations based on over 30 years of first-hand experience in the paper industry—more than 40 years in the design and construction of COTTRELL equipment for all types of industrial applications.

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EQUIPMENT FOR NO. 15 machine at Camas includes:

- 1—Midwest-Fulton condensate siphoning stock to No. 15 machine in the new plant.
- 2—General Electric 900 HP motor, 450/600 r.p.m., main drive on the new No. 15.
- 3—Three Morden stockmakers supplying stock to No. 15.

4—Consistency control ahead of No. 15.

- 5—Cameron rewinder, Type 20, an important feature of the new No. 15.
- 6—Six Bird screens, screening the stock to No. 15.

to the new No. 15 paper mill. Cutters, trimmers, etc., were moved from No. 2's finishing room's old location near machines No. 1 and 2.

Napkin and Waxed Lunch Roll Building

A new 140 x 140 ft. one-floor building has now been constructed and equipment installed for a napkin department and an entirely new wax plant. They are on either side of the building without any partition between. In the napkin department are 12 folders and an automatic wrapper. Three of the folders are new, but the rest were moved from an old napkin department.

The new wax plant is quite unusual and some comment on it seems in order. Dilts Machine Works has supplied a 70-inch wide, 30-inch long waxing machine which runs a 50-inch roll. The Cameron Machine Co. has put a constant tension unwind stand on the waxing machine which provides constant tension on the unwinding roll of paper going through the machine. For the wind-up end they have provided a constant tension center rewinder.

Its potential speed of 1,020 ft. per minute is also unusual, as usual speeds in the past for light waxed lunch roll sheets such as are run on this machine have been around 400 to 500 ft. per minute.

Compressor, brine tanks, ammonia receiver, brine cooling tank and other auxiliary equipment are new.

Other unusual equipment in this plant include four Schultz lunch roll winders,

completely automatic and with many improvements over earlier equipment of this type. A metal edger, Brightwood boxmaker machine and automatic outside case sealer are new equipment in the wax plant. General Electric motors are used throughout. York Refrigerator Co. provided refrigerator equipment.

Converting Plant Additions

Some of the most amazingly intricate equipment yet produced for paper converting has been added to the converting plant equipment at Camas.

Shown in a photograph with this article is the new facial folding machine, supplied by Paper Converting Machine Co. of Green Bay, Wis.

This is the longest and biggest machine of this type ever made, with three decks or rolls and a lineup of 130 parent rolls. Parent rolls each have their small former, and all of the folded facial comes down on a belt and piles up. The tissue runs to three circular knives which are synchronized in movement to cut the tissue while it is moving with the saw.

A fully automatic boxing machine made by Redington Co. of Chicago is another interesting addition.

Steam Plant

There is also a new Babcock & Wilcox two-drum power boiler, which has been installed by C. C. Moore and Co., in the steam plant. The boiler was designed to generate 170,000 pounds of steam per hour at 725 lbs. pressure when burn-

ing fuel oil. The unit is completely water-cooled. The boiler as furnished is suitable for future operation with pulverized coal and is installed in such a manner that it can be so operated with a minimum amount of remodelling and with the addition of slag and ash handling equipment. The boiler is equipped with Bailey controls. The boiler feed pump is Ingersoll-Rand. The forced and induced draft fans were furnished by American Blower. The steam turbine drives for pumps and fans were furnished by General Electric. The induced draft fan is mounted on the roof of the boiler plant and a short Venturi stack is mounted directly on top of the induced draft fan. The boiler building is constructed of steel and Transite and is equipped with a service elevator.

MEN WHO DIRECTED EXPANSION

It was the late Albert Bankus, former vice president in charge of manufacturing, who had a leading role in envisaging this vast program and obtaining its endorsement from his fellow members of the Crown Z board of directors. But many others participated prominently. They include:

Jack E. Hanny, resident manager when the program began at Camas, and who, in the midst of it, moved up to succeed Mr. Bankus as vice president and as supervisor of the expansion program in all the mills, together with his assistant, Reed Hunt.

Frank N. Youngman, vice president in

out with Rivets



and no more rivet trouble



O-KNI-CO-LOK dis-assembled.
Ordinary slitter knife is in center.
Note small button on the
O-KNI-CO-LOK which fits into
any rivet hole on slitter knives
of this type.

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Portland, Ore., with responsibilities over the Columbia-Willamette valley mills, whose close liaison between manufacturing and sales provided knowledge of postwar competitive needs.

Frank A. Drumb, who succeeded Mr. Hanny as resident manager and is carrying the program to completion, and who was in close touch with it earlier in San Francisco headquarters.

George W. Charters and Albert G. Natwick, assistant resident managers at Camas.

Osmund T. Defieux, plant engineer, was in charge of all construction for the Camas management, and he was the liaison man with the Central Engineering division. The Central Engineering Division of Crown Zellerbach Corp., in Seattle, headed by E. H. Vicary, manager, with W. J. Lowndes, chief engineer, and R. P. Hutchinson, assistant chief engineer, directed all construction in cooperation with Camas mill executives. J. H. Moak, now plant engineer at West Linn, was resident representative of the Central Engineering Division.

Gus Ostenson, manager of paper manufacturing at the Camas mill.

Jack Savage, sulfite superintendent who also has charge of both bleach plants, including the new one.

L. D. McGlothlin, kraft mill superintendent.

Arthur Newcomb, paper mill superintendent.

H. W. Duvall, converting plant superintendent.

W. C. Gigler, wax plant and napkin department superintendent.

All new construction work at Camas (and also at West Linn) was done by the Hoffman Construction Co. of Portland, Ore., headed by L. Hawley Hoffman and his son Burns Hoffman.

LA CAMAS WAS AN INDIAN DELICACY

NAME GIVEN FIRST WASHINGTON MILL

Columbia River Valley Indians grew a hyacinth-like lily, with a dark blue flower, in the meadows and marshes of that country. They called this flower "Kamass." They baked the bulbs, wrapped in swamp grass, in primitive stone pits and they were regarded as a great delicacy.

Frenchmen at the Hudson's Bay Co. trading post at Vancouver, Wash., then gave the flower the name La Camas.

In 1883 the first paper mill in the state of Washington was built 17 miles east of Vancouver, on the north shore of the "Old Man River of the Farwest." The owners decided to call the settlement La Camas Colony. It was shortened to La Camas, and, finally, in 1909, to just Camas.

First white men to see this lush riverside spot, still a fishermen's paradise, planted the British flag there in 1792. They were Lieut. W. R. Broughton and his crew aboard the Chatham, one of Capt. Vancouver's exploration ships.

In 1806 it was the winter camp site for the Lewis and Clark expedition. There were other temporary visitors including, a few years later, Alexander Ross and two other young men from the Astor trading settlement at Astoria, Ore. Young Ross wrote of staying at "Washougal Camp" and so gave the name Washougal to what is now the twin town of Camas.

In 1844, the first American pioneer child in what is now Washington state was born there. He was Christopher Columbus Simmons, son of Col. Michael T. Simmons, who built the first industry in the Washougal-Camas area—a shingle mill. Three sawmills, each lasting only a short time, were built in 1846, 1851 and 1852.

There were no more industries until the La Camas Colony Co. was created by Publisher Henry L. Pittock of the Portland Oregonian and associates, purchased 2,600 acres at what is now Camas and built the first paper mill in 1883, with D. H. Stearns as its manager.

The organization and ownership of the operations changed as time passed. There was the Columbia River Paper Co., then Crown Columbia Paper Co., then Crown Willamette Paper Co. and, finally, Crown Zellerbach Corp.

By May, 1911, Camas had seven machines, employing 450 persons with a \$25,000 monthly payroll. In 1913, it installed a 186-inch machine, called the largest in the world, and Jack E. Hanny was engineer. Mr. Hanny became resident manager at Camas in 1930, holding that position for 17 years until succeeded in 1947 by Frank A. Drumb. Mr. Hanny is now vice president in charge of manufacturing of the Crown mills.

STAINLESS STEEL TALKS

Esco Pipe-Valve-Fitting Show

THESE MEN were "on the spot" at Esco's round table on valves, pipes and fittings. Top (l. to r.): DON SHIRLEY, ROBERT E. RICHMOND, BEN KIRBY, JOE E. MCQUAID. Below (l. to r.): JACK WILCOX, DAN KILLFOILE of Alloy Steel Products; BILL STAPLES of Carpenter Steel.



About 40 engineers and maintenance supervisors from Northwest Washington pulp and paper mills and chemical industries were guests of Electric Steel Foundry Co. at dinner and an exhibition and discussion of stainless steel pipes, valves and fittings at the Washington Athletic Club in Seattle Nov. 3.

The first meeting of its kind ever held in that area brought forth a lively discussion of one of the prime subjects of interest in this industry today—stainless steel. A galaxy of specialists from the Esco firm, abetted by representatives of two affiliated companies—Carpenter Steel Co. Alloy Tube Division of Union, N. J.,

and Alloy Steel Products Co., of Linden, N. J.—told of both the wide range of possible uses of stainless in valves, fittings and pipings, and also of its present limitations.

Esco, a Portland, Ore., firm which has for many years specialized in stainless steel as both a manufacturer and distributor, presented what was, in effect, a summary of its experiences and its "know-how" developed over many years through its metallurgical and engineering departments and experiences in the field.

Joe E. McQuaid, manager of Esco's Seattle office, was chairman. John M. Wilcox, manager of Esco's process equipment division, first explained how Esco was organized to serve industries in all regions of the continent.

Ben Kirby, of the engineering department, discussed the foundry and some characteristics of centrifugal and static castings. Robert E. Richmond, another engineer and son of Harry Richmond, veteran Esco chief engineer, told of many types of valves produced, and of the development of complete stainless steel valves.

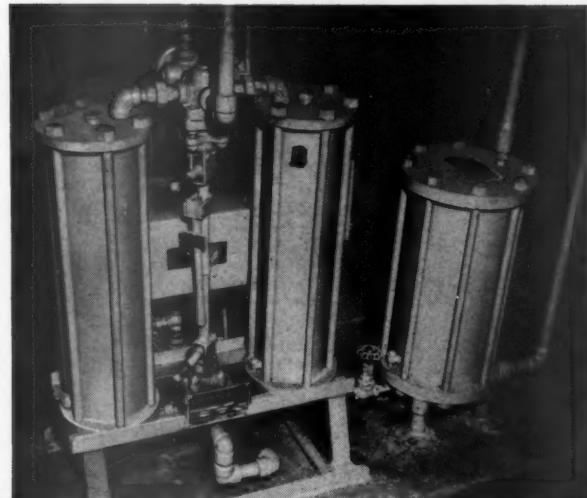
Don Shirley, manager of Esco's stainless steel division, discussed pipings and fittings and reviewed stainless steel developments in general. He mentioned A.I.S.I. Types No. 304, 316 and 347 as the stainless most useful in pulp and paper industries. Esco's trade mark type, Alloy 45, which is similar to No. 316, was described.

William R. Staples, western sales manager of Carpenter Steel's Alloy Tube Division, came from San Francisco for the meeting.

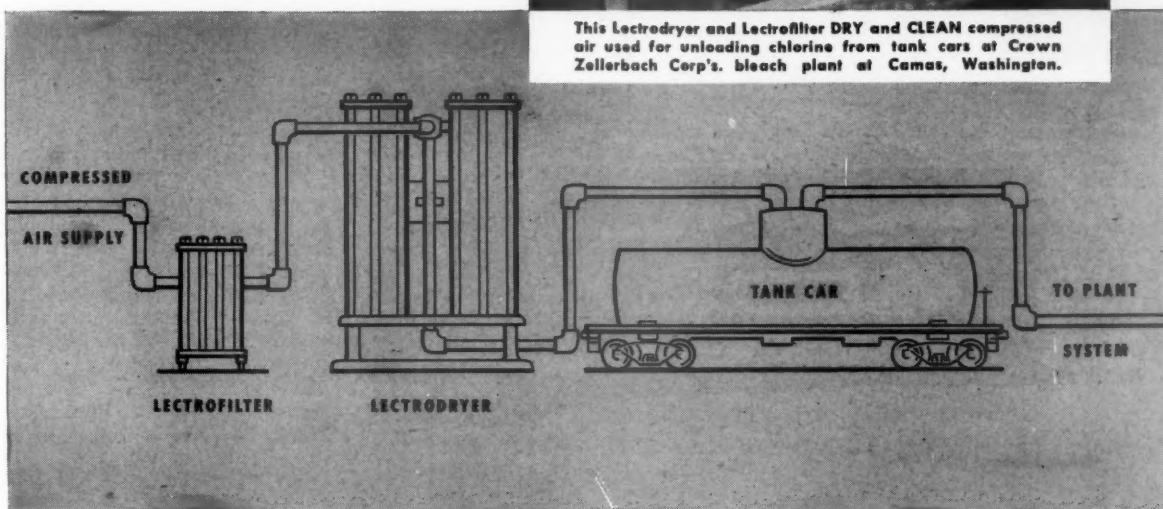
Dan Killfoile, newly appointed western representative of Alloy Steel Products, on his way to new offices at 3757 Wilshire Blvd., Los Angeles, went west for the meeting from Linden, N. J.

Esco may hold similar round tables in other cities in the future.

**CAMAS KEEPS
ITS CHLORINE
*dry***
to safeguard equipment
and paper quality



This Lectrodryer and Lectrofilter DRY and CLEAN compressed air used for unloading chlorine from tank cars at Crown Zellerbach Corp.'s bleach plant at Camas, Washington.



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Moisture, if allowed to mix with chlorine, forms acid which attacks storage tanks and pipe lines. This means rapid destruction of equipment and contamination of the liquid by products of corrosion. Since chlorine producers deliver their product clean and free from moisture, Camas takes these steps to keep it that way.

A Lectrodryer dries the compressed air used to force the chlorine out of the tank cars into the plant system. A Lectrofilter removes any oil which may have carried over from the compressor. Thus only DRY, CLEAN air comes in contact with the chlorine. Tanks and piping are protected, and the high quality of their bleached

kraft paper is maintained at Camas.

Lectrodryers DRY air, gases and organic liquids to dewpoints as low as -110° F. Charged with Alcoa Activated Alumina, one column of a machine is removing moisture while the other column is being reactivated by heat. This cycle is repeated day after day, year after year, with no dropping off in efficiency. Its control may be manual or automatic.

Have you a DRYing problem? Call on our engineers' years of experience in solving them for industries all over the world. Pittsburgh Lectrodryer Corporation, 315 32nd Street, Pittsburgh 30, Pennsylvania.

This Lectrodryer installation was engineered by R. E. Chase & Company of Tacoma, Seattle and Spokane, Washington, and Portland, Oregon. Other Lectrodryer agencies are located in many principal cities throughout the United States.

LECTRODRYERS DRY
WITH ACTIVATED ALUMINAS

LECTRODRYER
REGISTERED TRADEMARK U.S. PAT. OFF.

ENGINEERS "HEYDAYS"

WILL MEET IN BOSTON IN 1949



J. W. "Bumps" HEMPHILL (left), Manager of Pulp & Paper Industry Division, Johns-Manville Corp., who headed up Buffalo Conference as General Chairman of TAPPI Engineering Division.

ALVIN. H. JOHNSON (right), veteran pulp and paper mill consulting engineer, of New York, who is the newest member of Engineering Division leadership.



In what is now a fairly long history for associations in the pulp and paper industry, there has never been anything quite like the phenomenal Engineering Division of TAPPI. They are a tribe to themselves, these engineers, and in just three years they have grown into a formidable body with a remarkable zest for association activities.

They demonstrated this again at their third annual Engineering Conference in Buffalo, N. Y., Oct. 25-28, a fitting sequel to the successful Milwaukee and Philadelphia conferences of the past two years.

When we say the engineers of the industry have become a tribe to themselves, fiercely clannish and proud of their own special activities, we mean just that. TAPPI President Wilbur F. Gillespie (who is a technical director from Louisiana, and not an engineer) was just kidding, and having a lot of fun doing it, at the opening dinner in the Buffalo Statler when he talked about needing a "body-guard" while mixing at close quarters with these engineers, and of how he was present by special dispensation, etc., but there was a little thread of truth in his banter.

Next Year in Boston

The engineers are putting their "all" into their Annual Conferences and last winter they by-passed even the big TAPPI meeting in New York in February in order to concentrate on their own affair. So, again in 1949, the engineers will have their 4th Conference, and it will be the only separate fall meeting to be held by any TAPPI division. It will be in Boston—in the Boston Statler Hotel, Oct. 31 to Nov. 3.

This time it may be staged without any special sponsors as there are many engineering and equipment firms in that area that will gladly cooperate. Visits to Rice Barton, to Bird Machine, even to distant Impco and other plants are likely to be on the program.

The dates for the 1949 Conference are set a full month and a half after the National Fall Meeting of TAPPI in Portland, Ore., scheduled for Sept. 12-16, and therefore should not detract from attendance at that Far Western meeting, which all divisions of TAPPI are expected to support. This will be only the third National meeting in TAPPI's history on the Pacific Coast and the program will include events of interest to engineers and all major divisions.

Registered attendance for the meetings in Buffalo totaled 314. Of this number, 141 were mill engineers and other mill executives. This compares with more than 470 registered at Philadelphia and about 400 at Milwaukee. More than 500 were reported in attendance at the final Buffalo dinner.

Westinghouse Corp., with the biggest motors plant of the world in Buffalo; Lockport Felt Co., with a modern felt plant at nearby Newfane, and the Upson



Co., a specialty board mill, provided tours and entertainment highlighting the Buffalo meeting.

Pringle in Line for Chairman

J. W. "Bumps" Hemphill, manager of the Pulp & Paper Industry Division of Johns-Manville Corp., who re-organized the Engineers Division of TAPPI a few years ago, and who has been the No. 1 spark-plug of its recent phenomenal growth, headed up Buffalo activities as general chairman of the group.

Next year it is expected that George H. Pringle, who recently was promoted to assistant chief engineer of all the Mead Corp. mills, will take over the general chairmanship.

But all the Engineering Division leaders—Milton Jacobs, who is probably destined to "carry the ball" at his home town meeting in Boston in '49; A. E. Montgomery of Ross Engineering; Phil Goldsmith of Pusey & Jones; J. E. A. Warner of Robert Gair; G. R. Wadleigh, consultant; Alvin H. Johnson, veteran mill engineer and newest member of the top division hierarchy—all pitched in to make the Buffalo meeting a success. R. S. Kersh and Morton Cooper of Westinghouse, and Frank La Que of International Nickel, played important roles.

Keynoting Talks

A. N. Ball, chief engineer of The E. B. Eddy Company of Hull and Ottawa, Canada, helped Mr. Hemphill and Mr. Gillespie set the tone for the meeting after their opening remarks at the first session. Mr. Ball stressed the need of close cooperation between development engineers and top management in mills. Without not only the services of these engineers

RAYMOND LEE (left) and his father WILLIAM LEE (right) welcomed TAPPI Engineers during their recent tour of the Lockport Felt Co. plant at Newfane, N. Y. This is one of the most modern felt plants in the U. S. William Lee is President of the company and his son is Executive Vice President.



L. R. LUDWIG (left), General Manager, Buffalo Divisions, Westinghouse Electric Corp., who was host to TAPPI and arranged their tour of his plant—the "Motor Capital of the World."

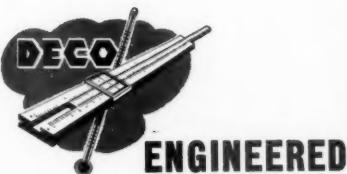
A. M. ("MORT") COOPER (right), Manager, General Mill Electrification Industrial Sales Dept., Westinghouse Electric Corp., East Pittsburgh, Pa., who is widely known in paper industry and did much personally to make the Buffalo meeting a success.

C-E CONSISTENCY CONTROLLER CHOSEN BY CAMAS FOR NO. 15 PAPER MACHINE



Uniformity begins with consistency. C-E Consistency Controllers are a requisite "first step" for they will maintain stock density within 1/10 of 1% at any setting from 2% to 6%. These units, which can be supplied with a stainless steel stuff box as pictured at Camas, are simple to adjust, easy to install and mechanically trouble-free.

*Pacific Coast
Supply Company*
SAN FRANCISCO • PORTLAND



One of the rigidly mounted nozzles, a part of the HIGH JET system engineered and installed by Deco . . . Drying is increased and more uniform. Dryer felt life is improved.



No. 15 machine—the newest paper machine—at the Camas, Washington, mill of Crown Zellerbach Corp.

DREW ENGINEERING CO.

Air Conditioning
Dust Control

Ventilation
Drying

809 N.E. Lombard St.

Portland, Oregon



PROMINENT LEADERS AT THE TAPPI ENGINEERS' CONFERENCE in Buffalo, N. Y., this year (left to right)—J. E. A. WARNER, of Robert Gair Co., Inc.; MILTON JACOBS, Charles T. Main, Inc.; P. H. GOLDSMITH, Sales Engineer, Pusey & Jones Corp.; A. E. MONTGOMERY, Vice President and Western Manager, J. O. Ross Engineering Corp.; WILBUR F. GILLESPIE, Technical Director, Gaylord Container Corp., and national TAPPI president; GEORGE R. WADLEIGH, Consulting Engineer, New York City; and WILLIAM PRINGLE, Assistant Chief Engineer, Mead Corp.

but also their cooperation, top management is handicapped, he said.

At the Eddy mills, Mr. Ball said, engineers submit drawings and data—including a summary of benefits to be obtained—on all possible expansion for a year ahead. Management then tentatively selects and approves portions of this program. A revised program is then drawn up by engineers and final approval within budget limits is made by management. Mr. Ball, incidentally, was accompanied to Buffalo by R. G. Johnstone, manager of manufacturing in the Eddy mills.

Electric Trucks and What They Do

In its 1946 North American Review Number, this magazine described how Hammermill Paper Co., at Erie, Pa., acting upon findings of its engineers, created a separate department to coordinate and centralize materials handling under Superintendent A. J. Aubin. At Buffalo, G. L. Hawkins, materials handling engineer for Hammermill, told of some of the savings achieved.

Hammermill has gone in for Yale, Automatic and Baker electric trucks in a big way. This separate department now has 85 men in it, including various foremen and engineers. Transport equipment comprises 42 electric trucks, 15 gas motor trucks for yard work and four highway trailers. Value of inside transport is \$350,000 and of outside equipment, \$55,000, and cost records are kept on all these. Inside transport totals 4½% of mill operations cost. Here are a few things achieved:

Only 42, instead of 72, men required to load beaters.

Only 9, instead of 30, to handle wet lap.

Two men take only 1½ hours with electric truck to unload a boxcar of purchased pulp, where 7 men took 5 hours with hand truck.

Mr. Hawkins said Hammermill cut some doors to make 8 by 6-ft. aisles and installed Air Lec doors, which automatically snap open and reduce cold leakage. They also adopted a composition rubber wheel to save concrete floors from damage.

New Wood Handling Ideas

John A. Willard, a Boston materials handling engineer, gave a rather rambling talk on economics of wood handling, discussing briefly trends all over the con-

tinent and especially things he saw in Sweden recently. Generally, Sweden is far behind America in mechanization, he said, but he described an interesting water sorting system for wood there, using underwater motor-driven propellers in various channels. He said he saw Swedes cutting trees 3 or 3½ inches in diameter.

In Sweden, he also saw the use of one depressed track on a railroad spur as a means of automatically dumping wood from flat cars. When the car tipped down on the depressed rail, the wood rolled off. He said side openings on railroad cars were being introduced in the South.

In the research and machine design session, there were interesting talks on tests of flow spreader models by Frank M. Sanger of Pusey & Jones Corp., on measuring of slush stock flows with rotameters by Douglas Zimmerman of Fischer & Porter, and a presentation concerning a new type of continuous digester developed and in use in Sweden on kraft pulp. The inventor of this digester, Johan Richter, of Karlstad, Sweden, made the talk.

Another Continuous Kraft Digester

This is the third continuous digester of recent development. One is the horizontal type with inner and outer cylinder, with steam in outer area and chips passing through inner tube, which was invented by Joaquin de la Roza of New York and

Mileage Honors Go To Three Europeans

Siegfried Aeschbacher, manager of the Utzenstorf Paper Mill, near Berne, Switzerland; Johan Richter, Kamyr chief engineer, of Karlstad, Sweden; Hans Tschudi, of H. Weidmann, Ltd., Rapperswill, Switzerland, traveled farthest among registered attendance at the Buffalo meeting.

Next honors went to N. W. Coster, general superintendent, Soundview Pulp Co., Everett, Wash.; W. A. McKenzie, chief engineer, and Bob Hoit of Simpson Logging Co., Shelton, Wash., and Bob Petrie, of Black-Clawson Co., Portland, Ore.

Chief Engineer Jim Davidson and T. R. Stein of M & O Paper Co.; Elroy Clark of Blandin Paper Co.; A. O. Mortenson of Florida Pulp & Paper; E. J. Oakleaf of Crossett; O. Winningham of National Container in Jacksonville; Tom Tierney of Rauh & Co., Houston, Tex.; and a Gaylord Container delegation including TAPPI President Wilbur Gillespie, B. B. Pierce, R. J. Cruthirds and M. R. Guell, came a long way, too.

Mexico City. This is being given its first fully-implemented trial at the San Rafael mill in Mexico (see **PULP & PAPER**, July 1948, page 38). Another new continuous digester is just in a development stage in the Middle West.

Mr. Richter is chief engineer of a Swedish equipment firm and is credited with carrying his digester idea through to realization single-handed after others had given up on it.

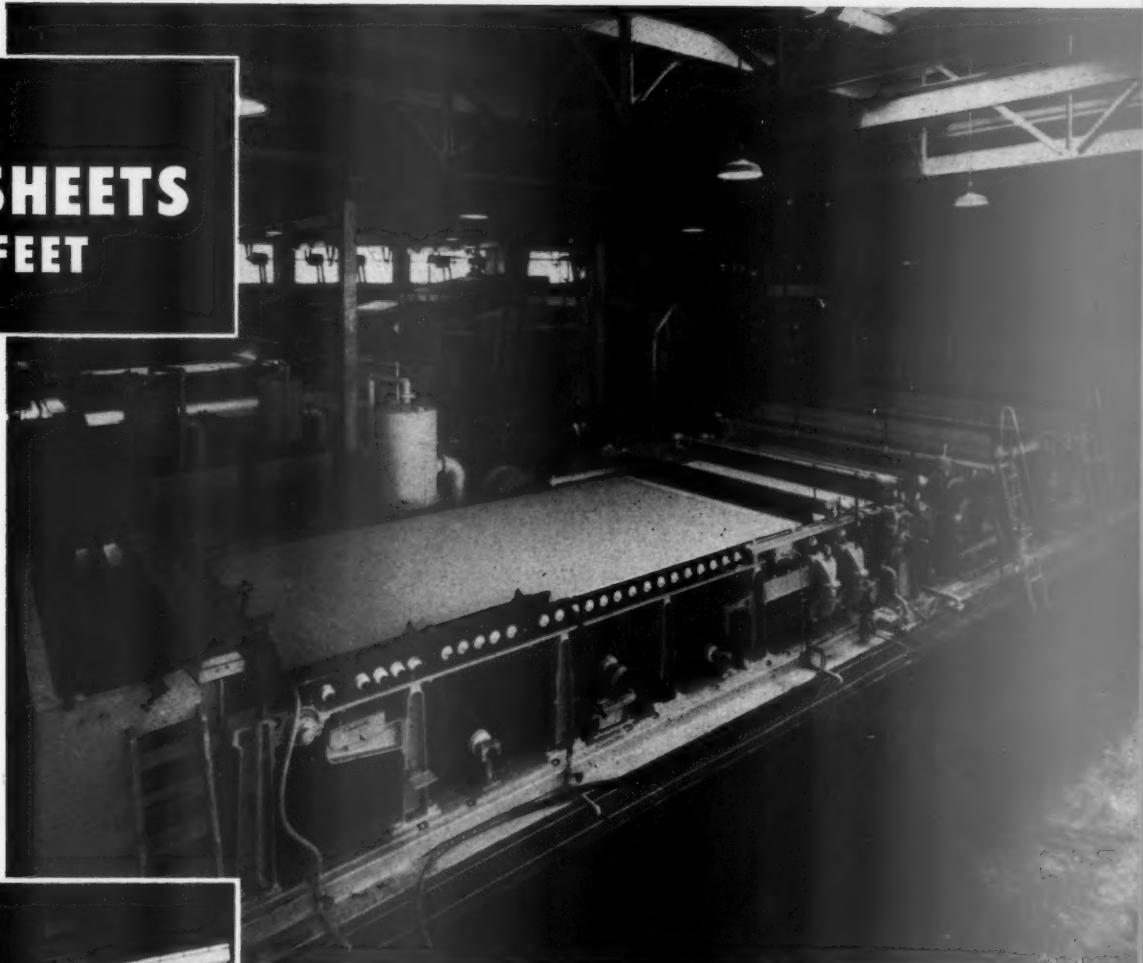
Although some operators have questioned advantages to be obtained by continuous cooking, Mr. Richter contends the Swedish installations, some of which are just now being made and are not yet given sufficient trial for positive results, will save labor, assure more uniform pressure, temperature and other conditions and thereby reduce strains and corrosion. He stressed the point that blow steam can be returned to the process, bringing steam consumption down to one pound for a pound of pulp—about one-half of usual consumption. Although there are many rotating parts in his mechanism, he said maintenance would not be great, as shown in the present Swedish installation. Liquor is recovered and pulp washed very quickly.

Sales promotion of this digester in America is still in abeyance, but for those who heard Mr. Richter's talk and others interested, we publish on the following page of this story, a drawing of his digester, describing the flow, and also showing and naming the mechanical parts. Interesting portions of Mr. Richter's talk follow:

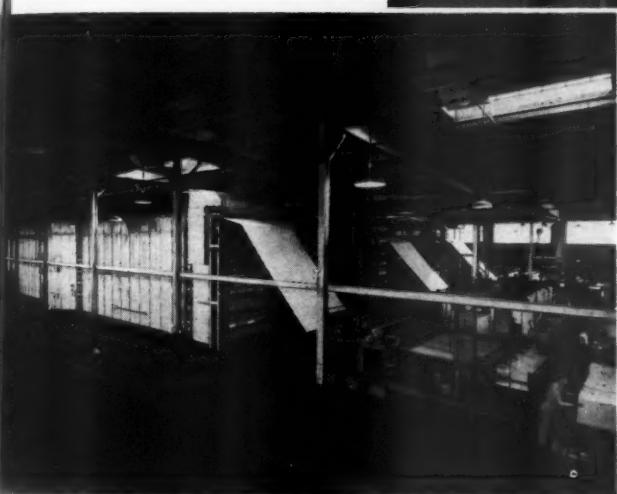
Experimentation began back in 1938 and Karlsborgs kraft mill, owned by Swedish Royal Forest Industries, provided pilot plant, chips, liquor, steam, power and operators. Initial installation was based on two-stage cooking but after several failures a complete new system was decided upon. The first digester was turned upside down and placed on top of the second one, forming one digester of 5 ft. dia. by 40 ft. By means of compression liquor at the bottom, we put the digester under a hydraulic pressure of about 30 lbs. per sq. inch above the steam pressure at 170°C, i.e. some 140 lbs., thus preventing any formation of steam in the digester. By these means we were able to keep 100°C at the top, increasing 170°C further down, which temperature could be kept locally with no disturbances as heat transmission was effectively checked. We were now back to the classic cooking scheme (said Mr. Richter):

1. Steaming of the chips with evacuation of air and gases.
2. Impregnation during 1-2 hrs. at 100° - 120°C

**FROM
SLUSH TO SHEETS
IN 2,600 FEET**



WET END OF THE BATTERY OF THREE PULP MACHINES, AND THE DRY END OF THE MACHINES WITH SHEETS OF PULP EMERGING FROM THE DRIER.



**AMERICA'S LARGEST
PRODUCER OF UNBLEACHED
SULPHITE PULP**

CAPACITY:
125,000 TONS ANNUALLY

Puget Pulp after digesting, cleaning, screening, and thickening, flows on to the Fourdrinier screens as a near-liquid . . . and comes off the machines as dry sheet pulp after traveling 2,600 feet in less than twenty minutes.

**PUGET SOUND
PULP & TIMBER COMPANY**
BELLINGHAM • WASH.

In the upper part of the digester.
 3. Heating to digestion temperature of 165°-170°C in the central part.
 4. Digestion during 1-2 hrs. in the lower part.
 5. Blowing from the bottom.

The cooking liquor introduced at the top together with the chips had no chance of draining. Thanks to the black liquor introduced at the bottom in order to put the whole digester under hydraulic pressure, we achieved the first and most important requirement: Chips and liquor would move downwards at the fixed rate of digesting and reach the bottom together, the chips digested and the liquor exhausted.

The sluicing-out device was adjusted so as to have a somewhat higher capacity than that corresponding to the feeding of chips and liquor at the top, the gap being filled automatically by the compression liquor introduced at the bottom. This arrangement brought about an elasticity of the system very much simplifying the operation.

The vessel which was previously used for impregnation now served for steaming the chips for evacuation of air and gases. The steaming vessel was allowed to be kept under a pressure of some 10 lbs. by means of one of the rotating feeding valves previously used. The problem of feeding without damaging the chips was accomplished by means of a rotating feeder, a liquor pump connected to a screen provided with a conveying screw placed on top of the digester. From the operator's point of view, this new feeding system offers an absolute security which is not the case with plunger or screw feeders with their risk of back-firing. As far as a defibrillator is concerned this risk does not mean so much. With a whole digester behind, however, a backfiring may cause a catastrophe. Our new rotating feeders simply act as a shut off valve in the case of a standstill.

The present type of feeder which is perfectly balanced, thanks to the pocket going diametric-

ally through the rotor and provided with a screen in the middle. Though sand, rust and other impurities are necessarily passed together with the chips, practically no wear has occurred. This is mainly due to the sealing and lubricating effect of the leakages around the rotor, which in themselves are insignificant.

This design of a balanced rotor has brought us further advantages with which we had not originally reckoned, for instance the possibility of feeding dry straw at a rate corresponding to 50% of the capacity performed with chips. The straw is just washed into the pocket by means of circulating liquor, the liquor passing through, leaving the straw (or other material) on the screen to be washed out and onto the digester top as the pocket reaches the horizontal position.

In order to increase the capacity and maintain an approximately regular flow of liquor, the rotor may be equipped with 2, 3 or more pockets, one adjacent to the other but at different angles, permitting an uninterrupted flow of liquor transporting the chips to the top of the digester.

The problem of heating was solved by means of a strainer in two separate halves and a pump circulating the liquor horizontally across the digester. After a few minutes the circulation had to be reversed in order to distribute the temperature more evenly, but above all to free the fibers adhering to the strainer in order to obtain a regular downward movement of the pulp. At the same time the slots of the strainer are automatically cleaned. As a matter of fact, we have till this day not once had to tend to the strainners, which is quite a surprising achievement.

It is also worth mentioning that, thanks to the high pressure prevailing in the digester, there will be no evaporation behind the strainners caused by the drop in pressure, and the circulation system consequently operates more efficiently than in ordinary digesters.

The chip feeder and auxiliary equipment has been dimensioned so that the corresponding quantity of straw may be passed, so as to produce also 30 tons of straw pulp. The pulp side has been dimensioned for handling semipulp with 50% higher yield, i.e. some 40-50 tons/24 hrs. In this case some type of refiner may be inserted either between digester and blow tank and working under pressure, or after the blow tank.

A Swedish plant will be in operation next summer, for 30 tons. Two more plants for 30 tons and a 60-ton unit will be in operation in the spring of 1950.

So we have concentrated on continuous cooking of Kraft pulp and similar processes such as soda or monosulfite. At the present time a pilot plant for sulfite cooking with digester in stainless steel 2 1/2 ft. in diameter by 27 ft. in height, is under erection in a Swedish mill.

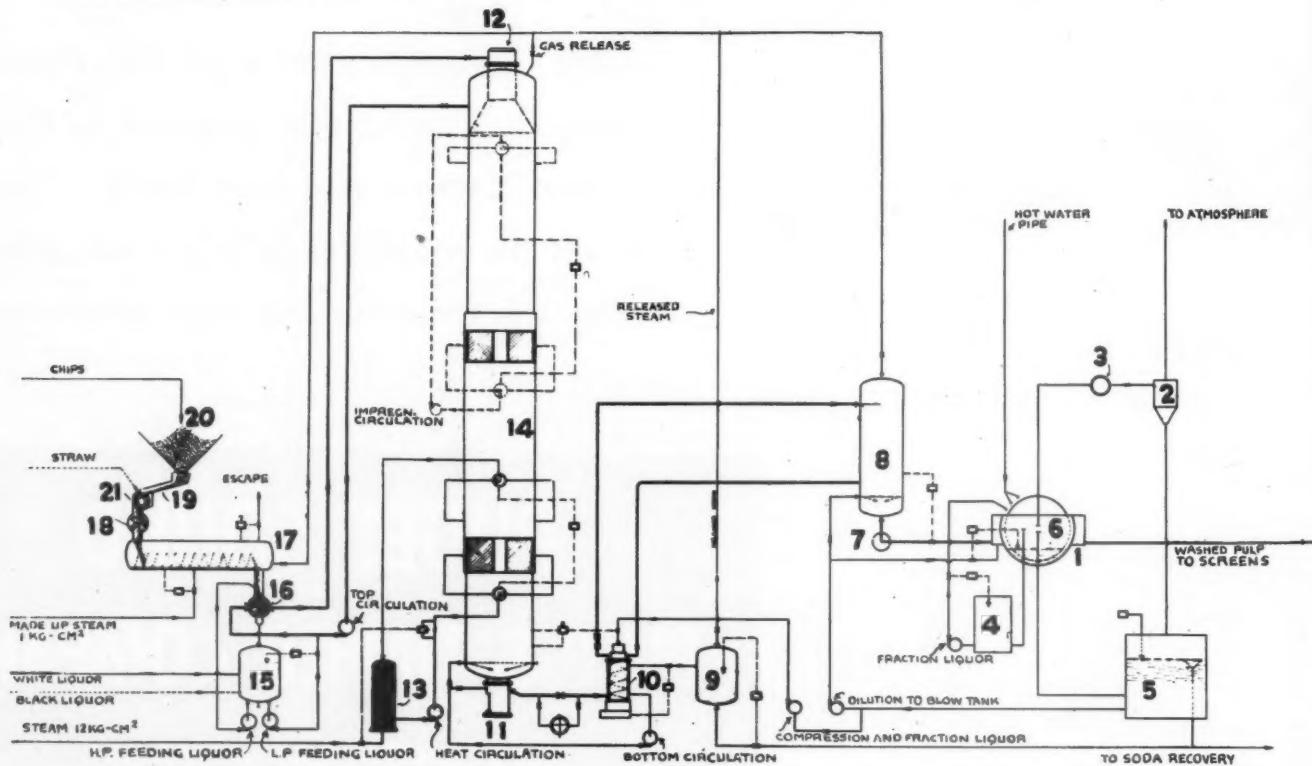
We are expecting certain difficulties with sulfite in addition to the ones encountered on sulfate—on the other hand we also look forward to greater advantages from a chemical point of view.

Second Day at Westinghouse Plant

The "Bright New World"—the dinner speech subject that first night at the Statler — was a very gloomy world, according to the speaker, Rob Ray Macleod, vice president of Buffalo Niagara Electric Corp., but the next day things perked up as the entire convention moved en masse by buses and limousines to the big Buffalo division of Westinghouse Corp. Here they continued their meetings in the Westinghouse auditorium and went on a long tour of the huge plant, seeing all the

THIS DRAWING SHOWS THE FLOW OF OPERATION, left to right, and also the mechanical parts of the continuous kraft digester which Johan Richter of Karlsbad, Sweden, described before the Engineers' Conference in Buffalo.

The Flow is as follows: High pressure feeding liquor; low pressure feeding liquor; top circulation; impregnating circulation; heat circulation; bottom circulation; compression and fraction liquor; dilution to blow tank, and fraction liquor. Also see description of process as reported on this page. Mechanical parts are shown by numbers, as follows: 1—Mixer screw, 2—foam killer, 3—vacuum pump, 4—fraction liquor tank, 5—black liquor tank, 6—wash filter, 7—refiner, 8—blow tank, 9—liquor receiver, 10—concentrator, 11—bottom scraper, 12—top screw, 13—heater, 14—digester, 15—liquor receiver, 16—feeder to digester, 17—steaming vessel, 18—feeder to steaming, 19—chip meter, 20—vibrating chip chute, 21—chip bin. Also there are some 14 instruments, including various flow meters, temperature, pressure and flow regulators, concentration control, automatic valve timer and temperature indicators.



FERNSTROM'S famous No. 3 — completely equipped with ROSS SYSTEMS



**flat tissue — faster — with
scientific air handling!**

WHEN Fernstrom Paper Mills, Inc. decided to make their new mill and machine the last word in streamlined efficiency, they included one of the most modern and complete arrangements of Ross Air Systems ever installed.

Ross heating and ventilating, with thermostatically controlled air supply temperatures, machine hood, felt drying, calender cooling, trim conveying — all play an important part in the operation of one of the fastest machines in the world on flat tissue.



J. O. ROSS ENGINEERING

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DECEMBER, 1948

81

steps in the manufacture of 30,000 motors a month of up to 350 hp.

One of the things they saw was the electrical switch equipment and panels for the new kraft pulp and board mill being built by Weyerhaeuser Timber Co. at Springfield, Ore., and apparently this was already for shipment.

Steam and power and drying and ventilating were the subjects of the morning session. After a technical description of ways and means of treating water for boilers and process use, J. C. Spahr of Westinghouse took the stand to talk about turbines.

Right at the outset a veteran Wisconsin engineer drew some chuckles by declaring his preference for steam engines, claiming a saving of a dollar a ton, but apparently his main objection was the usual one—the complicated process of electronic drives which admittedly require expert attention.

Standardization of Turbines

Mr. Spahr advocated standardization, as far as possible, of industrial turbines and in doing so he stirred up quite a verbal debate. His contention was that central station industries are reaping benefits of reduced cost and better equipment by standardization and that industrial users could also reap these benefits. He thought there could be standardization on inlet pressures and temperatures, etc., but a New York mill engineer who said he was an ex-turbine designer contended standardization couldn't go very far because "there is no such thing as a normal paper mill." The upshot of the discussion was that the Engineers Division may make a study of the proposal. It seemed a moot point as to whether mill men or turbine men were best equipped to make the study or recommendations.

Mr. Spahr urged that before buying a turbine, a mill engineer chart the requirements for steam and by-product power over an entire year and also other requirements, in order to minimize fuel costs. He said reasonable expansion and also anticipated shutdown periods should be taken into account in such a survey.

Red-Ray for Drying

Use of radiant heat from suitable gas-fired cups or units for increasing the driving capacity of present paper machinery drying equipment was discussed by G. W. Garland, of Dudley, Garland and Jensen, Inc., of Cambridge, Mass. The unit he discussed and showed in slides is the "Red-Ray" which has been installed in mills in California and in Texas, where there is an abundance of cheap natural gas.

PULP & PAPER, Aug. 1948 issue, page 90, presents an article by G. R. Van Kampen, sales manager of Red-Ray Manufacturing Co., New York, describing the uses of infra-red or radiant heat for drying. A mill in Los Angeles told **PULP & PAPER** it achieved a 10% increase in drying production.

Danger of fire and difficulty in getting insurance coverage are questions raised frequently in connection with these gas burners, but Mr. Garland claimed these

problems are being overcome. Paper is dried at a safe heat, he said. The Red-Ray and similar burners are used in the textile industry. They may also be used for felt drying, he said.

Greets Westinghouse Visitors

L. R. Ludwig, manager of the Buffalo divisions of Westinghouse, addressed the group before luncheon in the company cafeteria. He recalled how Westinghouse acquired the plant from Curtis-Wright after the war, moving both its motor and copper wire divisions to Buffalo. Motors above 350 hp are still made at Pittsburgh, but Buffalo is the largest motors plant in the world, nevertheless. It was enlarged to 2,400,000 sq. ft. of floor space and employs 7,000, many of whom had to be given extensive training.

Photographs taken by **PULP & PAPER** at the Simpson Logging Co.'s plant built last year at Shelton, Wash., to produce coated insulation building board and published in the Jan. 1948 issue of this magazine were shown to illustrate a talk on the Coe dryer which started off the Wednesday program back in the Statler. At Shelton is a 385-ft. long, 8-deck Coe dryer, with automatic feeding of the coated board, cut to lengths, into each deck in turn. This is one of several important units in this plant which uses former wood "leftovers" or waste from Simpson logging, sawmills and plywood plants.

Mill Maintenance and Materials

Francis V. Calvert, of General Electric Co., Schenectady, N. Y., gave an interesting talk on use of electric bulbs. He expressed surprise in finding out how big a user of electricity is the pulp and paper industry. He said it ranked next to the central stations industry.

Based on installed cost, he said, a 4160-volt system is more economical than a 13,800-volt system for mill capacities up to about 10,000 kva. In the range 10,000 to 20,000 they are comparable, above 20,000 the latter is the logical selection. Standard cables can be obtained for the various system voltages.

Generally a radial distribution system is the most economical and affords sufficient system reliability for both low- and high-voltage feeders. The low-voltage system is most likely to require other variations.

Use of fly ash with boiler slag was discussed by the next speaker and it was contended that this mixture was found to handle quite well in bulk. Jamison Moore, of Union Bag & Paper Corp., Savannah, was final speaker on this program and what the maintenance department can do with cutting and welding.

The final afternoon of sessions was a series of round tables scattered around in different rooms of the Statler. Actually there were five of these round tables going on at once, headed up by leaders of the Engineers Division—Messrs. Montgomery, LaQue, Goldsmith, Wadleigh and Warner on respectively, drying, maintenance, machine design, materials handling and steam and power. Bark burning and fly ash disposal discussions under Mr. Warner packed a too-small room with 54 partici-

pants and others, trying to get in, couldn't. The other sessions were not crowded but averaged 50, except materials handling which drew only 22.

Final Dinner—Theatre of Atoms

Straight from the Grand Central Palace of New York came "The Theatre of Atoms" and it was produced at the final dinner in Buffalo in exactly the same fashion which attracted thousands in Manhattan. Sponsored by Westinghouse, the atom show is a spectacular and educational treatment of atomic energy which was particularly enjoyed by the more than 500 engineers and affiliates.

R. S. Kersh, manager of the Industrial Sales Department of Westinghouse, acted as toastmaster, introducing the leaders at the speakers' table.

Tour of Lockport Felt Co.

Next morning three large busses were on hand to take the engineers on a tour of the Lockport Felt Co., Newfane, N. Y., and the mill of the Upson Company at Lockport. A large number of members stayed over to see where Tenax felts have been made since 1891. This is one of the first eleven mills which are still in operation and which comprise the chief mills now making papermakers' felts.

On hand to greet the engineers were William H. Lee, president of Lockport Felt; Bert Audley, assistant to the president; Raymond Lee, the executive vice-president; Lester Carner, secretary; and many others well known to the industry.

The visitors were taken through the modern plant from inspection and grading of the wool to the finished felt. Engineers saw wool from Texas, Ireland, Montevideo and other parts of the world, being sorted and blended for desired characteristics. They then witnessed the dusting, separating and scouring. They saw the automatic carding and the spinning on the "mules" and then observed the burling (removal of minor imperfections) and the splicing of the ends. Groups were also shown the shrinking of the felts to exact dimensions, which requires intimate knowledge of the qualities of the wool involved.

Upson Board Mill Tour

The engineers were then transported to Lockport Country Club where refreshments and buffet luncheon were served. In the afternoon the group rolled to the Upson Company at Upson Point, Lockport, to see the operations of this unusual board mill which has made a great success of end-products. The Upson mill, operated by W. H. Upson and his associates, produces 230,000 pounds of board daily—but that is not the whole story. It is noted for trade-marked products in the puzzle and tableware field.

It operates four beaters, Hydrapulper, and a cylinder machine trimming 108 inches. It features a sizable laminating operation which was not a part of the mill tour. Jigsaw puzzles are made literally on a belt-line process at Upson, and the visitors saw board coming from the machine, pasted with a picture, die-cut into jigsaw pieces, and dropped automatically into a lithographed box.

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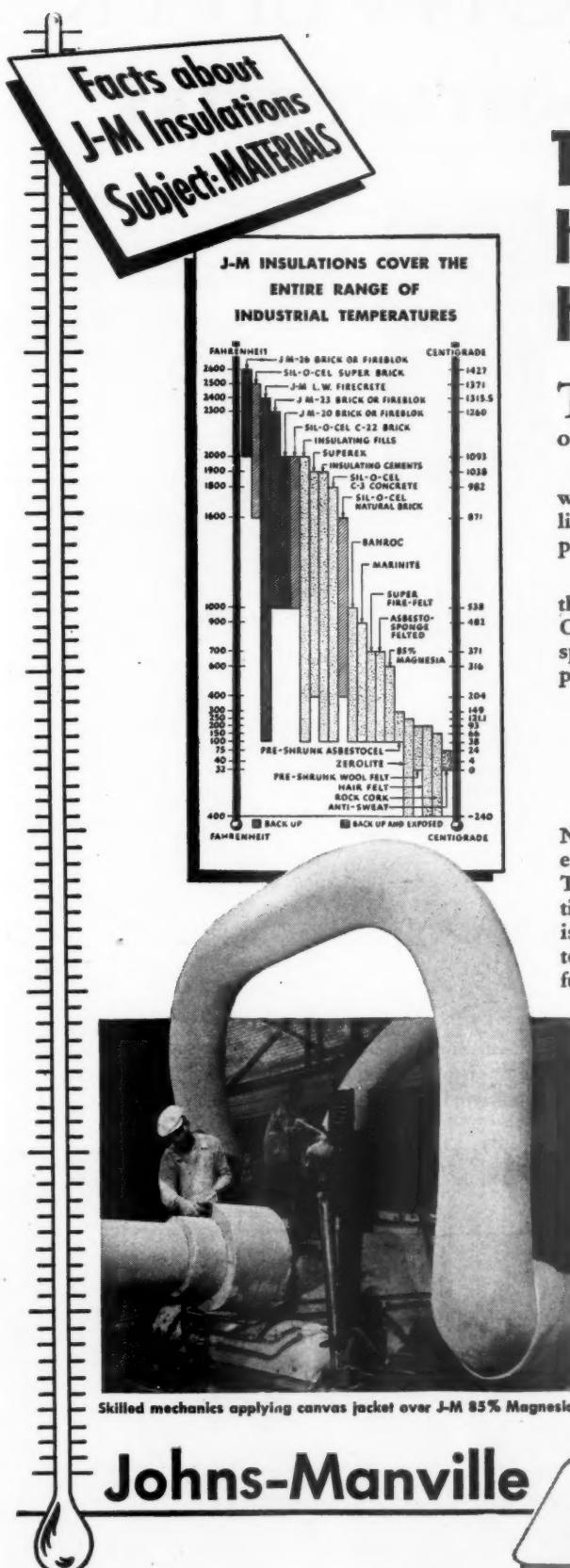
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The **RIGHT** Insulation helps industry offset higher fuel costs

TODAY'S higher fuel costs emphasize the importance of insulation more than ever before.

Average price at the mine for bituminous coal in 1931 was \$1.54 per ton. In 1946, the most recent figure published, industry paid \$3.44 per ton, and today the average price is estimated at more than \$4.

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ATLANTA CONVENTION

REVIEW OF IMPORTANT TALKS

The stepped up tempo of the southern industry, with its speeded up machines, served as a background against which production techniques were discussed in sessions of the Southern and Southeastern Divisions of the American Pulp and Paper Mill Association, Oct. 21-22 in Atlanta.

While the 64 mill men registered provided a substantial gathering, the absence of many familiar faces testified to the contiguous date of TAPPI's Buffalo meeting. Total registration was 207, not including 37 wives.

Ray F. Bennett of Ecusta Paper Corp., a national leader of the Superintendents, presided over the opening ceremonies in the absence of Lee M. Bauer and William Brydges, who were on the high seas returning from Europe. The opening program session had Sidney R. Brown, Southeastern vice chairman, presiding for Mr. Bauer.

Bird Equipment Discussed

The history of the vibrating screen, borrowed from mining, was briefly sketched by Sven Fahlgren, of Bird Machine Co., before getting into details of the Jonsson screen. The exclusive feature of this device, he said, is the patented trough design. The shower for the rejects is an urgently needed factor when the screen works at capacity. The shower saves fibers—as much as three tons per



day, he said. It is essential to control consistency ahead of the vibrating screen. The vibrating tends to kill foaming; and as much as 10% salt cake is saved by using the knotter ahead of the washer.

In the combination of knotter and bull

NEW OFFICERS FOR SOUTHERN DIV.:

PHILIP J. HANNAN (upper left), of Southern Advance Bag and Paper Co., Chairman. ROLAND WILBER (upper right), Southern Paperboard Corp., First Vice Chairman.

HAROLD MORRIS (lower left) of Mobile Paper Co., elected Third Vice Chairman of the Division, and ANDREW DOWNEY (lower right), Florida Pulp & Paper Co., Southern Division's new First Vice Chairman.

screen consistency up to $2\frac{1}{4}$ % can be used. The vibrating screen is being tested in the fine screen field.

Use of the larger "jordan" type, more rapidly operated felt conditioner to meet the challenge of the faster paper machines was described by B. D. Warren, also of Bird Machine Co. This device, of course, provides a rapidly alternating gush of water and succeeding vacuum for its removal. The conditioner for the faster machine speeds is large and is driven from the felt roll. It can replace the older box but service connections must be enlarged. The new jordan type uses 8-gallons of warm water per minute (temperature of 90 to 100 degrees) and 100 foot vacuum; the older unit uses 3 gallons at the same temperature with 64 cubic feet of vacuum. Tests show time between changing felts to have been extended from 6.4 days for non-conditioner operations to 12 days with conditioning. One multiple machine mill estimates it

ENJOYING BUSINESS AND PLEASURE (e.g. golf) at the Atlanta meeting. Top row, (l. to r.): GEORGE E. SCOFIELD, Rayonier, Inc.; A. D. LEVERT, Gaylord Container Corp.; R. E. PHINNEY, Container Corp.; HENRY BORMAN, Southern Paperboard Corp.; GORDON K. SINGLETARY, Brunswick Pulp and Paper Co.; GEORGE D. COBAUGH, Harbeson-Walker Refractories; CLAUDE L. HUEY, Babcock and Wilcox; JOHN G. LEITH, Bottom row (l. to r.): W. E. BAILEY, Shartle Bros. Machine Co.; K. M. THORSEN, Camp Mfg. Co.; J. C. DIEFFENDERFER, Hercules Powder Co.; SAM HELBERG, Camp Mfg.; SAM E. CROCKER, JR., John W. Bolton and Sons; JOE BRUFFY, Florida Pulp and Paper Co.; ALLEN BETZ, Gulf Engineering Co.; A. B. MOORE, Crossett Paper Mills.



*for the world's largest and fastest
sensitizing machine . . . OZALID specified*

WALDRON **Coating Equipment**



A new high in the production of sensitized paper was reached when Ozalid's giant new coating machine went into operation at Johnson City, N. Y. A Waldron Microjet Air Knife Coater was chosen to meet the exacting quality standard and exceptional coating speed — up to 1000 feet per minute. Ozalid's coating line consists of a Waldron Automatic Unroll equipped for non-stop flying splices, a Waldron Microjet Coater

with its advanced air-jet doctor, Ross* dryer with special double arch drying channel, Waldron Tension Control Unit and Waldron Winder with air lance method of changing from full roll to empty core.

Again — Waldron Machines — an important part of the picture of a famous product.

*Dryer built by J. O. Ross Engineering Corp.

JOHN WALDRON CORP.
Main Office & Works - NEW BRUNSWICK, NEW JERSEY
BUILDERS OF QUALITY MACHINES SINCE 1827



AMONG THOSE PRESENT AT ATLANTA (left to right) ROBERT MORSE, Kieckhefer Container Corp.; PAT S. O'BRIEN, Socony Paint Products Co.; C. B. WEISS, Chemical Cotton Div., Buckeye Cotton Oil Co.; H. M. OSTEINDORFF, West Virginia Pulp and Paper Co.; C. H. WILLIS, National Tube Co.; FRED V. BAILEY, Garlock Packing Co.

will save \$100,000 in a year from this device.

Frank A. Jensen, Southern Division chairman, presided over the luncheon, which was addressed by Dr. Gerald A. Rosselot, Georgia Tech's Engineering Experiment Station director. Dr. Rosselot offered Georgia Tech's services in research work for the industry, especially in chemistry and sanitary engineering. He said that after consultation with paper industry leaders in Georgia, it was determined that the university would not undertake a paper school at present, but rather prepare students basically for training within the mills.

Regulation of stream use, and the work being performed by the National Council for Stream Improvement, was depicted to the superintendents by Russell Winget, that organization's secretary, assisted by Dr. D. W. Ghem, the organization's technical director.

Talk by Kutter on Hydronamic Inlet

Control of the approach flow of stock to the forming part of the machine as a step in the production of uniform thickness was discussed by Rudy Kutter, vice president and sales manager of Black-Clawson Co., of Hamilton O. He believes the continuous slot orifice the full width of the machine presents a solution to uniform flow distribution. The providing of a uniform pressure differential across the slot by means of uniform velocity in the duct ahead as obtained through Black Clawson's Hydronamic Inlet was described. He said, in part:

Several factors are involved which if fully realized should go far in contributing toward the best possible approach flow resulting in good sheet formation:

1. The velocity and volume of discharge should be the same per unit width all the way across the machine.

2. The fiber distribution in the water should be absolutely uniform so that the consistency is exactly the same at all points before formation takes place.

3. Eddies or a certain degree of turbulence is always present and cannot be avoided. Thus eddies should be kept to an absolute minimum since large eddies tend to cause unequal fiber distribution thus disturbing formation.

A continuous slot orifice the full width of the machine appears to be the only solution to uniform flow distribution. Even with a continuous slot orifice it is of course necessary to have uniform pressure differential across the slot and that can only be obtained by having substantially uniform velocity of the stock in the duct ahead of the orifice. To our mind this can only be obtained most effectively with the tapered

duct arrangement as used in our hydronamic Inlet.

In order to obtain uniform fiber distribution across the width of the machine, it is of course necessary to have all of the stock subjected to the same hydraulic treatment in approaching the head box or the vat as otherwise centrifugal forces will cause segregation of the stock with greater density in some places than others depending upon the flow conditions.

The Hydronamic Inlet as such consists of two tapered ducts extending across the width of the machine with the stock coming in at the large ends and flowing in opposite directions but with a common slot orifice for the two tapered ducts. The vertical partition plate between the two ducts is disposed parallel with the slot orifice the length of which is equal to the full deckle width of the machine with the top of the partition plate being about one to two inches below the slot.

The stock is supplied to the Hydronamic Inlet by means of a branch cross pipe permitting approximately one-half of the total stock to enter the large end of one duct from the front side of the machine and the balance of the stock entering the large end of the duct from the back side of the machine.

As the stock flows from the large end of the duct towards the small end, it is discharged through the slot orifice and since the cross sectional area of the duct diminishes at the same rate as the longitudinal flow in the duct diminishes, the stock velocity must of necessity be the same at all points across the width of the machine. This naturally assures a uniform pressure differential across the slot orifice which in turn results in uniform stock discharge at all points.

In this way the same conditions as to velocity and flow exist all the way across the machine thus enabling the inlet to discharge the uniformly distributed stock into the head box or the vat with a minimum of cross currents or eddies.

Another feature provided with the Hydronamic Inlet is a passage space around each end of the diagonal partition of about 1 inch in

RUDY KUTTER (left), Vice Pres. and Sales Mgr., of Black-Clawson, who discussed latest improvements on the Hydronamic Inlet, and **TONY AGRONIN** (right), Chief Engineer for Sharle Bros., who talked about using of Hydrapulpers for handling broke.



width which will permit a small but continuous circulation so that stock bundles will not form in the ends of the ducts but all of the stock will remain in continuous circulation.

It is a well known fact also that the stock flowing onto the machine should be as completely deaerated as possible. On Fourdrinier machines it is our opinion that the wire pit must be made deeper and longer than usual and be provided with baffles so as to carry the white water from the tray spouts up to the extreme end of the pit near the breast roll permitting a maximum of dwell time causing air bubbles to rise to the surface while the white water is flowing toward the discharge of the wire pit. Ample depth of white water over the flow pump suction connection must also be provided to prevent the formation of a vortex and subsequent entrainment of air.

On cylinder machines deaeration of the stock can be approached by preventing as much as possible the air from entering into the stock by white water cascading over the overflow dam of the uniflow vat or over the dam of the screen collecting box when the stock enters the mix box. To prevent cascading of stock in these particular locations, we have designed an automatic liquid level control which will permit the operators to keep up the stock level in the various locations to permit a smooth even flow without cascading thus preventing additional air from being entrained into the stock flow.

Through suitable design of the stock pipe and metering valve as well as the regulating box the system is made largely self-compensating for any variations in consistency at the regulating box so that the weight of the sheet is held substantially constant in spite of consistency variations.

The absence of cascading of stock at the regulating box also eliminates entrainment of air and contributes toward more uniform performance.

The liquid level control instrument has also been applied as a pressure regulator on Fourdrinier head boxes capable of detecting very small variations in the head of a Fourdrinier head box.

To permit the minute adjustment of flow from a Fourdrinier pump, the synchronous drive motor of the pump has been provided with a variable speed magnetic coupling. DC excitation for the magnetic coupling is provided by a coupled exciter or by an electronic rectifier and the excitation current to the magnetic coupling is controlled automatically by the liquid level control instrument. Thus dual excitation is provided for this pump drive however at the same time this automatic control can be switched to a manually operated push button control by means of a motor operated rheostat in the control circuit.

One of our latest installations has also been equipped with a zero speed instantaneous shut off control arranged so that if the Fourdrinier wire should stop for any reason, the couch drive is instantly shut down, the new stock is shut off by a quick acting air operated valve and flow pump drive and liquid level control are de-energized.

Handling Dry Broke, Talk by Agronin

Development of the Hydrapulper for handling broke was described by Tony

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Pulp and paper mill buyers know the value of Fairbanks-Morse "one-call" service. It means that *all* motor requirements—all servicing and application problems—can be funneled through a single authoritative and dependable source. The breadth of the line of Fairbanks-Morse motors assures impartial advice by men who are backed by long years of close cooperation with the pulp and paper industry. Fairbanks, Morse & Co., Chicago 5, Illinois.

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PUMPS • RAILROAD MOTOR CARS and STANPIPIES • FARM EQUIPMENT • MAGNETOS

Agronin, chief engineer, Shartle Bros. Machine Co., Middleton, O. with the aid of some interesting slides. Of particular interest were those installations where the broke feeds into the pulping agent direct, without labor and without picking up dirt from the pit. For this type of installation it requires a good elevation for the machine to afford the height. There are, however, some horizontal installations. Where direct feed is involved, the Hydrapulper is provided with automatic speedup and slowdown devices to minimize power consumption when trim only is being fed.

A further application of the Hydrapulper for continuous operations is in converting plants, where the reworked stock is fed back to the chests. Several have been installed, with a new one scheduled in the South. Main portions of Mr. Agronin's talk follows:

About eight years ago, the Shartle-Dilts organizations came out with an entirely new pulping principle in the Hydrapulper. It was not long before attempts were made to introduce this particular pulper for handling broke in mills. The first was installed by our Canadian affiliate in a newsprint mill in Canada in 1941. They installed two Hydrapulpers underneath the calenders and since then this mill has installed four more.

An installation was then developed for a multiwall bagging mill on the West Coast. This particular design has all of experience developed to date in the continuous handling of broke in Hydrapulpers. This is a standard 14-ft. unit in which the top of the tub is flared up so that we can pick up the broke from the reel, two calenders and the last drier. There is a special by-pass installed next to the last drier so in case there happens to be more broke made than can be handled by the pulper, the sheet can be by-passed into a pit.

There are special showers spaced around this unit in order to wet the sheet the minute it starts down into the pulper. This is a continuous unit in that the stock is continuously pumped away at the same rate at which it is pulped.

There is an automatic control on the regulating box so that the position of the gate is controlled in case of a break. In normal conditions, the top of the gate is near the bottom of the tub so that just a small amount of broke is continuously handled at a very low horsepower consumption. In case of a break, the electric control raises the gate so that a large amount of water and pulp can be handled in the pulper. In this particular unit, it runs all the way from 500 lbs. at the lower gate setting to 3500 lbs. at the maximum capacity, based on pulping at 5%.

Herein is one of the basic differences between the installation of a breaker beater and hydropulper for handling machine broke. Due to the slower pulping time of the breaker beater, we used to figure the tub size on the basis of handling one hour's production of the paper machine. Due to the faster pulping time of the Hydrapulper, we have greatly reduced the tub capacity, in fact, the maximum at which we figure any of these jobs to date, is to have a tub large enough to handle about 15 to 20 minutes of the total machine production.

The second feature of the Hydrapulper is its ability, due to its vortex action, to handle fluffy stock. You who have watched the Hydrapulper will know that this particular vortex will pull in a light fluffy material much faster than that which can possibly be done by means of a roll in a breaker beater.

In the new broke Hydrapulper applications, manual handling of broke is practically eliminated. Another factor is the elimination of dirt which is normally picked up by the broke when it drops into the pit. In order to take care of applications in shallow basements, we have developed a horizontal pulper. This unit is an elliptical tank with a rotor at each end and is designed so that under normal operating condi-

tions when only the trim has to be handled, one rotor will take care of it. In case of a break, the second rotor automatically starts up to maintain the capacity required.

There are a number of Hydrapulpers used in board mills to handle the broke. In most cases, the pulpers are set alongside the dry end of the machine and the broke is dropped into it and handled continuously. An installation of this type has been in operation at Continental Paper Co., Ridgefield Park, N. J., for approximately eight years.

One of the problems in handling broke continuously is to get complete fiber separation. There is no pulping machine developed to date which gives a complete fiber separation. Some supplementary means is normally required in order to get the pulp into a completely defibered state.

We have recently developed a machine which we recommend for the installation between the Hydrapulper, or breaker heater, and machine or dump chest. This is known as the Shartle Miami Stock Drubber. The rotors of the Drubber are actually miniature Hydrapulpers. The machine is designed to greatly intensify the defibering action which is obtained from the Hydrapulper by confining the work to a small area.

Woods Movies by Walter Glass

Movies taken of the Gaylord Container Corp.'s forest operations were shown Friday morning with Frank Hayward as narrator, and Walter Glass, of F. C. Huyck and Sons Co., as projector.

Friday's program started with a zip furnished by a breakfast administered by the Gulf Section, International Brotherhood of Migratory Peddlers, George Witham, of Orr Felt, being master of ceremonies. The event was hilarious. The breakfast throng was augmented by the wives, some being drawn into the events of the program.

Bleaching Round Table

After breakfast, the meeting got started with a round table discussion about bleaching, with F. A. Jensen and Sidney R. Brown, Jr., as co-presiding officers.

The affair started with a discussion of temperature in the caustic extraction stage, which John Schuber of Solvay Process thought should be well up—160 degrees—but temperatures in the following hypochlorite stage should be down to protect quality. By using 50% chlorination, instead of 70%, a saving in proportion may be effected, he said.

On re-use of water, John Noble of Impco believed people started talking of

GULF SECTION, INTERNATIONAL BROTHERHOOD of Migratory Peddlers (with George Witham as Master of Ceremonies) packed them in for breakfast and then laid them in the aisles.



Borman and Downey Win Golf Trophies

In the Superintendents' golf tournament at Atlanta, Henry W. Borman, assistant to the president, Southern Paperboard Corp., Savannah, Ga., turned in lowest gross score, winning the John Noble trophy. Andrew F. Downey, Florida Pulp & Paper Co., won the Bechard trophy.

Roland Wilber, also of Southern Paperboard, fought it out with Mr. Borman in the same foursome, and brought in second low gross score. For the salesmen, Claude Huey had low gross score, Sam Crocker, second low gross. Harry Smith tied Mr. Crocker. Low net for salesmen was turned in by George Cobaugh; second low by C. H. Chapman.

Following the tournament, those attending the meeting were guests of Westinghouse Electric Corp., at that company's handsome quarters on North Line Drive.

60M gallons per ton for bleaching then cut back to 50M. Most of the first two stages go to the sewers, he said. In trying to use effluent from the hypochlorite washer much depends upon what kind of water you have. If good, then about one-third is reusable. If more used, it will mean more chemical needed in the next stage. One way to save water, he said, was to put in larger washers. On a 100-ton operation, 200 gallons were used on top the washer to displace dirt, he said. One mill increased washer capacity 50% and cut down to 20M gallons per ton, using well water.

R. L. McEwen, of Buffalo Electrochemical Co., discussed increases in strength in bleaching neutral semi-chemical process pulp. The semi-chemical process lends itself to getting 85 brightness in only three bleach stages, it was said.

Newsprint Review

The great potential of the South for newsprint production was hinted at by William L. McHale, vice president and general manager of Southland Paper Mills, Inc., in a review of the development of newsprint. After reviewing the difficulties in getting the first southern pine newsprint mill into actual production, Mr. McHale went on to say:

"Ever since the idea of a newsprint mill was conceived in Lufkin (Texas) the management envisioned not one but two and possibly three paper machines, but

(Continued on Page 100)

Personalities

SOUTH

DR. KARL KARLSON, who has been named "Assistant to President James H. Allen, of Florida Pulp and Paper and Alabama Pulp and Paper mills at Pensacola, Fla., both subsidiaries of St. Regis Paper Co.



U. J. WESTBROOK, who has become general superintendent of both Florida Pulp and Paper and Alabama Pulp and Paper Co., St. Regis subsidiaries, has a 20-year record in the industry. He graduated from Louisiana State University in 1928 and was chemist at Bogalusa, La., Bastrop, La., and Camden, Ark., then pulp mill tour foremen at National Container, Jacksonville, Fla.; and later at Pensacola, Fla., was named pulp mill superintendent. When the new Alabama Pulp & Paper Co. mill was put into construction Mr. Westbrook was named assistant plant manager for both Pensacola mills, Dr. Karl Carlson being manager. When Dr. Carlson was named assistant to President James H. Allen, Mr. Westbrook was made general superintendent.

R. I. FOX, of D & W Paper Co., Inc., New Orleans, was elected president of Southern Paper Trade Assn. at its annual meeting. Other officers include C. R. Liebman, National Paper Co., Atlanta, first vice president; Robert Roach, Roach Paper Co., Little Rock, Ark., second vice president; H. T. Newell, Jackson Paper Co., Jackson, Miss., treasurer.

WALTER J. WILKS, formerly paper mill superintendent at St. Marys Kraft Co., St. Marys, Ga., has become superintendent of the specialty mill of Chase Bag & Paper Co., at Chagrin Falls, Ohio.

L. M. CHAMPAGNE has returned to his post of general superintendent of Gulf States Paper Corp., Tuscaloosa, Ala., after an illness of several weeks.

BILL BECHTEL has become assistant to the plant manager of The Flinkote Co. mill at Meridian, Miss. He was formerly identified with the Insulite Division of Minnesota and Ontario Paper Co., International Falls, Minn.

W. R. CRUTE, Houston division manager for Champion Paper & Fibre Co., has been named a member of a special committee to study and recommend steps for water improvement of Houston Ship Channel.

GENE BECHARD, representative of Appleton Machine and other companies at Atlanta, Ga., was in Hot Springs recuperating from a fall in a paper mill in his Southern travels.

STANDARD REBUILDS NO. 1

A very active expansion and improvement program is under way at Standard Paper Manufacturing Co., Richmond, Virginia. H. W. Deffew, vice-president told a visiting **PULP & PAPER** editor at the mill. Mr. Deffew, who is active in the Superintendents association and well known throughout the Eastern Seaboard, learned his papermaking in England. He has been with Standard for several years and had a hand in building their No. 3 mill from the ground up.

In the modernization program No. 1 paper machine in No. 3 mill has been rebuilt and a contract has just been signed for the rebuilding of No. 1 machine in No. 1 mill.

The latter machine will have a complete new Fourdrinier part, including inlet and slice and suction couch. Seven new dryers will be added and the old dryer section rebuilt with new gears and bearings. Other additions will be a new smooth press and size press, nine roll calender stack and Syco drive and steam turbine.

Capacity of the machine is to be doubled and the machine will have a wide speed range to take care of specialty papers. At the present time Standard's No. 1 mill has six beaters, and washers, two jordans and a 90-inch Fourdrinier.

The No. 1 machine in the No. 3 mill is being completely rebuilt by Moore & White, with a Downingtown suction press included in the contract. A Pope reel is also being installed. The dryer section was rebuilt and six new dryers added. In the mill a Westinghouse steam turbine has

replaced an old steam boiler. Impco bleach plant and Impco three-decker washer are also part of the improvements here. A complete Syco drive installation has been installed.

Of much interest is the successful de-inking process at Standard. Hot water and caustic (at 150 degrees) are used in connection with a Dynapulper, Jonsson screens, and a Vortrap unit. Standard is producing about 50 tons daily of de-inked pulp of very fine quality and excellent fibers and this is mixed with West Coast pulps. One secret of their de-inking success. Mr. Deffew says, is the care they take in the sorting of waste paper. Biggest headache is scotch tape and its derivatives which are hard to detect and sometimes stick to envelope and stationery stock, forming a ball in the de-inking processes.

Waste paper is dumped onto a moving conveyor which brings it slowly to the Dynapulper. Stock moves through the Jonsson screens then through the Vortrap and on to storage tanks. The 25-ft. deep Impco bleacher is Stebbins tile-lined.

The Standard improvements will increase present tonnage by about 50 percent on their products which are chiefly book, bond, offset and greeting card stock.

The No. 3 mill, with a capacity before improvements of 100,000 pounds daily, has seven beaters, four washers, four jordans, and two Fourdriniers—one 102-inch and one 120-inch.

Georgia, Massachusetts Join Tree Farm System

Outstanding woodland management of privately owned land received official recognition in October as two more states—Georgia and Massachusetts—joined the American Tree Farm System. This brings to 23 the number officially cooperating in the national movement.

The Bay State's first Tree Farm is a 620 acre tract owned by Robert H. Lawton that has been in his family since colonial times. In 1932 Richard Lawton, a son, purchased 50c worth of tree seed and started a YMCA sponsored tree growing project on the property. The family went on to make wide scale plantings that have since netted nearly \$55,000 from sales of wood products.

Georgia's first Tree Farms were dedicated Oct. 6 during the Southern Forest Festival at Valdosta.

Included in 100,000 forest acreage certified by Georgia were Tree Farms owned by E. C. Fancher, Pearson; J. D. Cowart, Stockton; George Shelton, Sr., Valdosta; The Langsdale Company, Valdosta; S. F. Fender, Kirkland; A. T. Fuller Lumber Co., Ocilla; Union Bag and Paper Corp.; Savannah; Central Georgia Council Boy Scouts of America, Macon; Linton Hutchison, Kite; Mrs. Lilah R. Staples, Macon; Jeffreys-McElrath Manufacturing Co., Macon, and Superior Pine Products Co., Fargo.

WE BELIEVE

The largest asset on a company's balance sheet is often carried as the smallest item.

It reads:

Good will—\$1.00

EASTWOOD-WILLE
CORPORATION
AT BELLEVILLE, N.J. SINCE 1877



"The most effective way to encourage the growing of trees is to develop profitable reasons for cutting them down."—(A. G. T. Moore, Southern Pine Assn. executive, in 1938).

FIGURES TELL SOUTH'S STORY

Survey by PULP & PAPER Reveals Progress

Leading off this section in this issue, **PULP & PAPER** here presents a survey of Southern pulpwood production which its editor in that region has compiled after many weeks of preparation and contacts over the vast area extending from east Texas to the South Atlantic coast.

Emphasis in this survey is on advances in mechanization and they show that in mechanization in the wood, the South leads the North American continent. But other valuable data also has been gathered, including cost data on production.

PULP & PAPER'S now completed survey shows that of 21 companies operating 28 pulp and paper mills in 10 Southern states in early 1948 owned in fee simple a total of 6,439,000 acres of forest land, and were responsible directly or indirectly for the use of 7,645 pieces of mobile equipment for handling or producing pulpwood.

These mobile items are principally 6,301 motor trucks owned and operated by independent pulpwood contractors or dealers, and other equipment owned by the mills themselves and used in connection with their woodlands operations.

Twenty mills reported ownership of 792 trucks and 75 pieces of trailer equipment; and 29 mills, said at the time of the

survey, that they owned 336 tractors. To this there can be added a minimum of 145 pieces of motorized or motor-drawn equipment used for the maintenance of fire-access-breaks or roads on company-owned land.

Of the 792 company-owned trucks used in the woodlands, 327 were Chevrolets, 182 Fords, 83 Dodges, 33 Jeeps, 49 Internationals, 9 Macks, and 109 "others."

Of the 338 tractors, 20 were Allis-Chalmers, 86 were Caterpillars, 34 Fords, 131 International Harvesters, 54 Oliver Cletracs, and there were 13 "others."

Eleven mills reported using 13 cranes for transferring pulpwood from trucks to railroad cars at sidings. Nineteen said they operated 54 mobile cranes in mill wood-yards.

There Are 33 Pulpwood Mills

A development of recent years has been the "pulpwood mill" to which tree lengths are drawn by small tractors, to be cut into pulpwood lengths as they are drawn past a swinging cut-off saw on a conveyor to loading onto trucks. At the time of the survey there were 33 of these units being operated to serve 20 pulp-mills in the prescribed territory.

Tree felling is performed by cross-cut

or carried by the operators. In bucking, the power saw is universally popular. Fifteen mills stated they used power saws with their own crews, and every mill questioned said its contractors used them.

Inasmuch as not all of the company owned lands carry an adequate stand of trees, the mills are engaged in setting out pine seedlings not only to assure future pulpwood supply for the mill but also to bring their land into greatest economic use by causing it to produce a maximum cubic volume per acre. To expedite this work, 24 mills have purchased 38 seedling planters, estimated as capable of setting out a total of 380,000 seedling daily.

Pulpwood Sales—\$480,000,000

It must be realized that this picture of the pulp mill's importance in the Southern forestry field is not complete if limited to its own fee-owned lands. A substantial percentage of the mill's wood supply comes from lands of others, including the well managed forests of the lumber industry. It has been estimated that the value of timber stands owned by the pulp mills and others receiving income saws and with pulpwood mechanical saws, the latter being either mounted on wheels

(Continued on Page 94)

PULPWOOD EQUIPMENT IN SOUTHERN FORESTS

Left, tree length pine logs being drawn into a pulpwood mill where a swinging blade cuts them into pulpwood length. Center, a Panama pressure pump and 55-gallon water tank are part of

the fire-fighting equipment aboard this 1/4-ton Willys jeep which is controlled by radio.

Right, a popular number in southern industries fire control organization is the Dodge four-wheel drive Power Wagon equipped with Motorola radio, water tank, and Panama pump.



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APER

MECHANIZATION MEANS

MORE PULPWOOD!



TEAR OUT

"40% MORE WOOD PER MAN WITH CARCO TRACTOR LOGGING EQUIPMENT" REPORTS ONE NORTHEAST PULP LOGGER

One big Northeast pulp logger reports that mechanization has stepped up pulp log production by 40% more wood per man. The tractor logging equipment and the portable high-lead decking system shown here get much of the credit. The high-speed CARCO "R" Hoist supplies the pull for steady log gathering in all kinds of weather.

"The portable high-lead system just can't be beat" for gathering logs over rough terrain or marshy land, and especially in clear cutting operations. In stands inaccessible to vehicles, your hoist high-lead system equips you with a powerful arm to reach out and pull in the logs regardless of ground conditions.

High production is essential to profitably log small timber such as pulpwood and the fast line speeds of the "R" Hoist give you the additional logs to make up for lack of size in timber. Tractor mobility minimizes down time. This Northeast logger moves the set-up several hundred feet and resets in only 20 minutes.



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RENTON, WASHINGTON U.S.A.

CARCO

McCULLOCH SAWS

why are they



What's the Secret?

It wouldn't be much of a trick to build a light-weight saw...if you didn't care how it performed. The real accomplishment in designing the McCulloch was combining big-saw power and features with lightest weight. This is where our years of research and experience in building special light-weight engines paid off. First we designed a sturdy engine with special characteristics *exactly matched* to chain-saw duty—avoiding all weight that did not contribute to structural strength. We selected magnesium for the engine castings and then made our own dies to form featherlight, strong-as-steel magnesium engine parts. These are die-cast under tremendous pressure in our own plant. The final result is a high-output power unit that weighs only 38 lbs.

These Features Make Money for Loggers You can make more money with a fast-cutting saw that's easy to use. You'll find the McCulloch is a real logger's saw—with the features a logger needs.

- ★ All-purpose Rip-Cross chain is easily sharpened by hand filing in the field without special tools. It never needs setting.
- ★ 360° swivel permits close felling and underbucking. Moreover, the engine will operate in any position, because of its special floatless carburetor.
- ★ Correct chain tension is automatically controlled.
- ★ Automatic clutch stops the chain when the engine is idling. This safety feature also prevents the engine from stalling in a timberbind.
- ★ The handle detaches instantly, for one-man use or to permit pulling the blade through a cut.
- ★ Many other features—kickproof recoil starter, stainless-steel blade, and conveniently grouped engine controls—save time and effort on the job.

PRICES



20-inch chain saw... \$385.00



36-inch chain saw... \$395.00



48-inch chain saw... \$410.00



60-inch chain saw... \$425.00



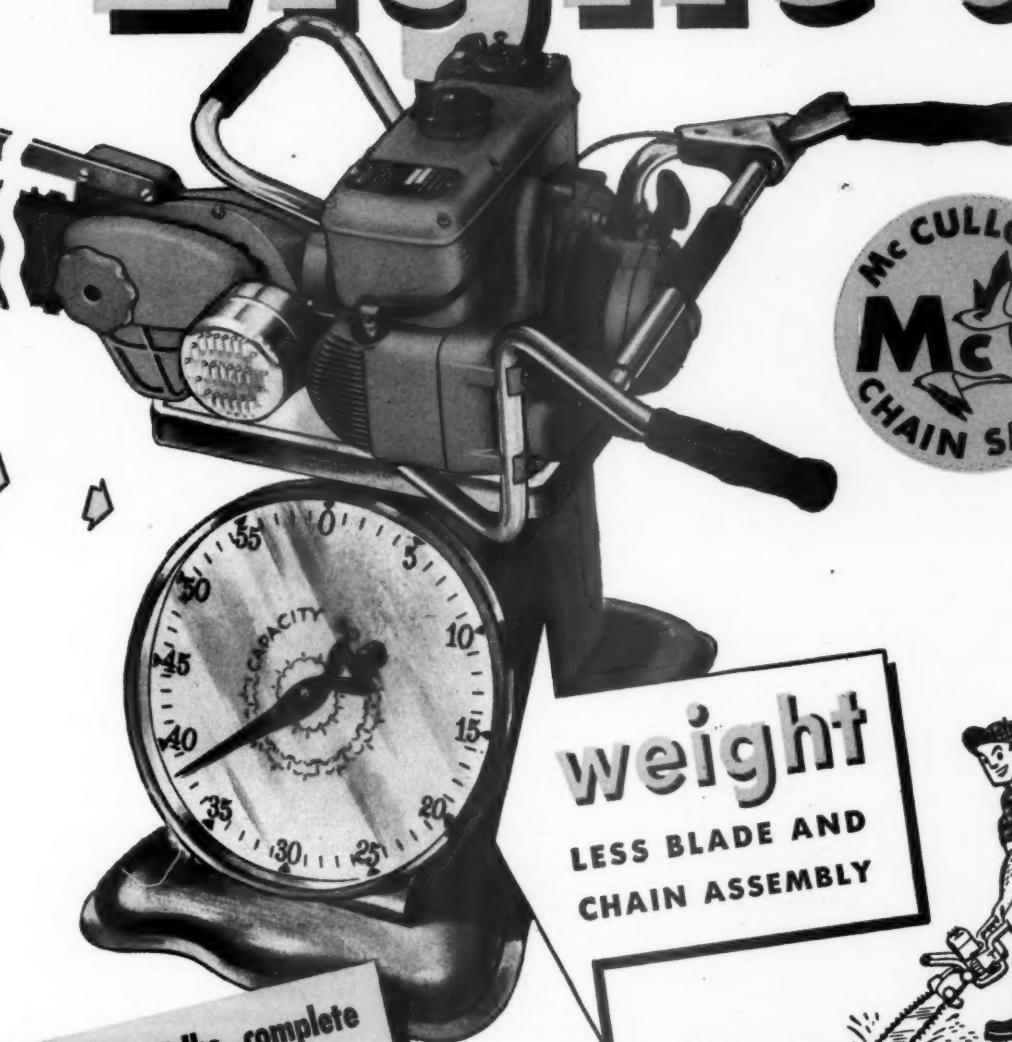
20-inch bow saw... \$425.00

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Y SO Light?



- * Weighs only 45 lbs., complete with 20" blade and chain
- * Full 5 hp for 2-man use on timber up to 5 feet
- * Choice of blades, in 20, 36, 48, and 60 inch lengths

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SOUTHERN PULPWOOD SCENES: Upper left—An International tractor draws large pulpwood trailer of the type developed by International Paper Co. in their Southern Kraft division operations in South Carolina. Upper right—An Allis-Chalmers tractor pulling a Carco arch (made by Pacific Car & Foundry Co., Renton, Wash.) in a pulpwood operation. Lower left—Oliver "Cletrac" tractor with fire control plow loaded on a truck prepared for a dash into the woods to put a fire line around a blaze. Lower right—Lowther pulpwood saw bites into the trunk of a "cat face" pine tree.

(Continued from Page 90)

from pulpwood sales amounts to a total of \$480,000,000, and that the payroll in the woods is \$38,000,000 annually.

Measured in terms of "Certified Tree Farms" of which there were 966 in the South at the turn of the year, the woodlands acreage being managed to maximum tree production amounted to 9,139,191 acres.

In the deep South, many of the large forest managing lumber companies maintain close observance of what the pulp industry is doing through **PULP & PAPER** since this is not only a market for their woodland thinnings and culls, but is also a source of quality saw timber. The pulp mills grow trees and when the process yields high valued logs they are sold to bring the maximum dollar return for the benefit of the woods operation.

The South has more forest land under real management now than any other section of the continent. Cutting practices on 72% of the total of lumber and pulp mill company lands has been classified as "fair to high order." In accomplishing this, mechanical equipment is indispensable.

To catch the magnitude of what is going on, just look at the production of 205,-

000,000 pine seedlings this year in 18 nurseries and realize this crop is far below the demand. One of the greatest contributions to Southern forestry has been the tractor drawn seedling planter. Through its use the cost of setting out pine trees has been brought down to an average of \$5.76 per acre, including \$1.60 for seedlings, \$1.25 for soil preparation, and \$2.91 for acual plantings. Seedlings costs are rising. It is estimated that hand planting of seedlings costs \$8.00 per acre, but the great value of the planter is in the maximum planting effected, not cost reduction.

The field for further utilization of mechanical equipment has been broadened by tests made over a period of years that have proven that preparation of the poorer soils of the Southeast (at a cost of \$1.25 per acre) has resulted in doubled seedling growth during the first 5 or 6 years, plus greater protection from fire damage.

Aside from private capital's woodlands created market for mechanical equipment, there is the pointedly financed state fire control equipment that embraces radio, airplanes, truck-tractor-plow set-ups, and the wide range of smaller units. Over \$7,000,000 was expended in the southern states for forest fire control in 1947.

Outlook for the Future

There are those whose view of the forests is only statistical. From these sources comes the wail that the "forests are disappearing." Then you hear the coupled depreciation of what the wood consuming industries did three decades ago, or more.

In truth, we are coming into a new forest—one governed by man to yield a maximum return per acre as a closely held source of raw material for industrial plants destined to provide a permanent payroll economy with accompanying mechanical efficiency.

Propagandists have emphasized the existence of the small forest land owner of narrow vision who chooses to force his land through a "take-all" cutting that leads to such acreage being removed from the wood-producing picture for a substantial period of time. But there are a growing number of small owners of woodlands who have observed the increasing permanent value of good producing woodlands and are building up this gilt-edged security.

There is in an ascendency a new forest and a new forest owner, one who is growing trees because it is and will be profitable.

CANADA NEEDS BETTER DATA

Canadians should adopt a more realistic attitude towards their forests, Gordon Godwin, woodlands manager of Quebec North Shore Paper Co., told the Canadian Society of Forest Engineers at a recent meeting in Fredericton, N. B.

"Because of our immense forest area," said Mr. Godwin, "there is far too much complacency on the part of the Canadian public which feels unduly secure when it hears that the country has 826 million acres of forest land and that this forest produces an estimated 240 billion feet of softwoods alone."

"The annual forest production of Canada is currently about 2,680 million cubic feet. To that add approximately 620 million cubic feet lost each year through fire, insects and disease, and we have a yearly drain on our forests of 3,300 million cubic feet."

"Apparently, there is a 73-year supply of softwood alone, considering the total merchantable volume. But the accessible volume of softwoods is estimated at only 133 billion cubic feet. About 75% or 2.5 billion cubic feet, of the current annual drain on our forests is softwood. Based on accessible timber, therefore, our known supply of softwoods will last about 53 years under present methods of operations. But any calculation is a guess. We lack a reasonably exact forest inventory and have practically no information on extent of immature forests and rate of growth."

"Whether our immature forests will reach merchantability within that time, thus prolonging this period, or whether loss by fire in young stands is cancelling increment, is anybody's guess."

Mr. Godwin compared Canada to a businessman who doesn't know what goods he has in stock, the value of his inventory or how long his business will last.

"Our timber supply situation isn't desperate," he said. "But it is serious, and I think we would be wise to plan on the day of reckoning being 50 years away. By the end of this century we may be scraping the bottom of the barrel—and it probably won't be a wooden barrel."

Reports from Ottawa indicate that the Canadian government is considering the initiation of a nation-wide forest policy which would provide for a inventory of the nation's timber resources, an analysis of their present and prospective use and an estimate of future utilization.

Mechanization Considered

Difficult for Quebec Mill

PULP & PAPER'S editor was a recent visitor at the Quebec North Shore Paper Co., for which Gordon Godwin heads up woodlands operations. There is no railroad into this remote Baie Comeau, Que., newsprint mill near the mouth of the St. Lawrence and the trip was made by plane. It is terminal of a rough north shore highway.

GORDON GODWIN,
Woodlands Manager of
Quebec North Shore
Paper Co., who says
there is a lot of essential
information on Canadi-
an forests which is lack-
ing.



machines which may eventually be installed. Cutting averages ten to 16 cords an acre. The wood is small, being very northerly, and averages 6 inches in diameter.

G. J. Lane, a veteran engineer and mill manager of many years experience in the Southern and Northeast United States industries and also in Canada, is resident manager at Baie Comeau.

Crossett Open House

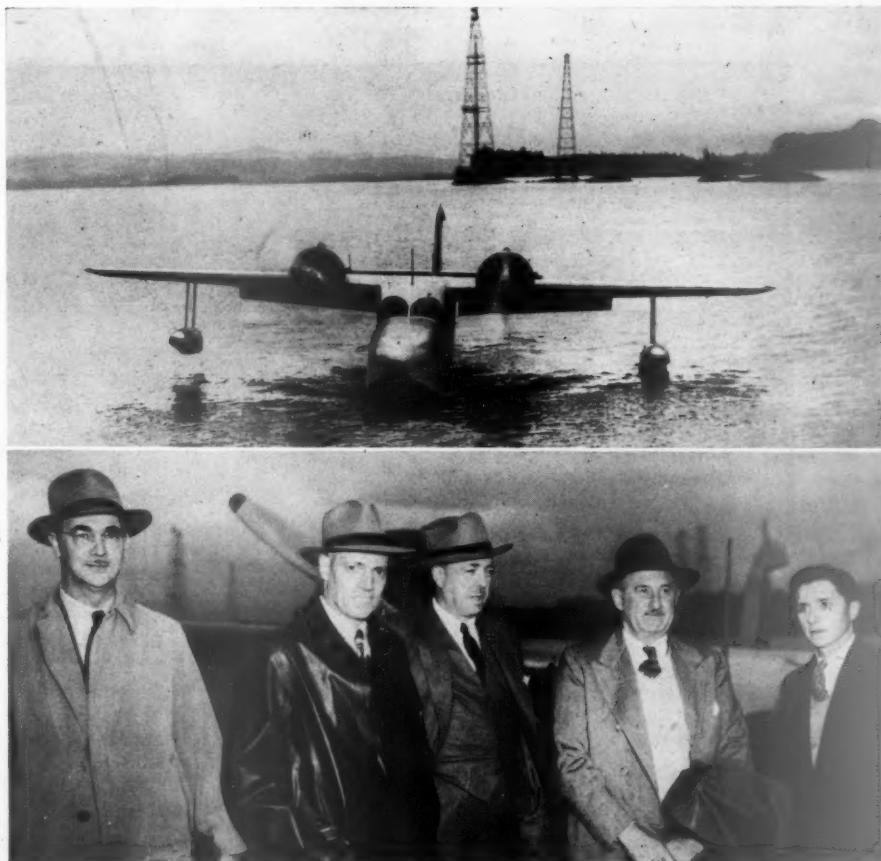
Crossett Experimental Forest, at Crossett, Ark., celebrated "open house" Nov. 1 to 5 inclusive. The noted experimental forest is operated by the U. S. Southern Forest Experiment Station on lands donated by Crossett-Watzek-Gates Enterprises, owners of Crossett Paper Mills.

Jackpine for News?

Chemists in Abitibi Power & Paper Co.'s laboratory at the Pine Falls mill in Manitoba are working on processes designed to make it possible to use jackpine in newsprint manufacture. Comparatively little of this species has been tried out in newsprint manufacture.

CANADIAN EXECUTIVES RECENTLY visited the Camas, Wash., mill of Crown-Zellerbach Corp., as they started a tour of Pacific Northwest mills. Top—Executives of Ontario Paper Co., Thorold, Ont., and Quebec North Shore Paper Co., Baie Comeau, Que., arrive by plane at Camas.

Bottom—Having transferred from the Powell River Co. plane to Crown-Zellerbach's boat, "Crown of Camas," the visitors are welcomed by A. G. NATWICK (second from left), Assistant Resident Manager, C-Z Corp., Camas. The others are executives of both the Canadian companies. (Left to right), J. B. JONES, Assistant to Manager of Mfg.; NATWICK; L. C. ANDERSON, Manager of Mfg.; A. A. SCHMON, President and Manager. At extreme right is GEORGE WILLIAMS of Powell River Co., who piloted the plane.



Personal

CANADA

RALPH HAYES, former assistant general manager at Quebec North Shore Paper Co., Baie Comeau, Quebec, has moved to Pine Falls, Manitoba, as manager of the Abitibi mill there. **WALTER HOLLAND** is now assistant manager at Baie Comeau. Although Mr. Holland is a native son of Thorold, Ont., he worked in other mills before joining the Chicago Tribune organization eleven years ago.

JAMES MOYNIHAN, groundwood superintendent at Bowaters' Newfoundland Paper Mills, Corner Brook, Nfd., was surprised on his birthday in October with a phone call from his sons at Southland Paper Mills, Lufkin, Texas, and a daughter there. Jim helped start up the first Southern pine news mill there and he also did consulting work at the San Rafael mill in San Rafael, Mexico, on loan from Maine Seaboard.

LEON SHAFFREY, wood preparing superintendent at Bowater's Newfoundland Mills, sailed on the steamship Gulfport from Corner Brook, Nfd., for Montreal, en route to New York state with his wife, son and daughter. The parents were on a vacation in their old New York haunts but the two children were going to start their careers, the daughter as a nurse and the son in business.

WESLEY BENNETT, chief engineer for the Canadian International mills with offices at headquarters in the Sun Life Bldg. in Montreal, was a recent visitor at the New Brunswick International newsprint mill at Dalhousie, N. B.

PHILLIP GRUCHY, general manager of Anglo-Newfoundland Development Co., of Grand Falls, Nfd., owned by the London Daily Mail, has recently become a prominent figure in Ottawa as one of the official delegates in the historic conference negotiating the union of Newfoundland and Canada as one commonwealth.

A. M. HURTER, son of the Fred Hurter, Montreal engineer, was married Oct. 16 to Miss Agnes Cadieux. Young Hurter had planned a trip to Sweden, but it has been postponed.

GORDON ALLO, former superintendent of control at Bathurst Power & Paper Co., Bathurst, New Brunswick, has been promoted to process superintendent and **ROBERT A. JOHNSTON**, chemical engineer, has been advanced to control superintendent. Mr. Johnston was formerly with Shawinigan Chemicals at Shawinigan Falls, Que.

RALPH BERGSTROM, of Swenson Evaporator Co., Harvey, Ill., made a motor tour in Quebec in October with Roy Garnett, of the Toronto office.

G. F. LAYNE, formerly vice president in charge of manufacturing, Price Brothers & Co., Quebec City, has been named vice president and general manager.

E. P. BRENNAN, resident manager of B. C. Pulp & Paper Co.'s Woodfibre, B. C., mill, was host recently to a group of Vancouver bond dealers who made a tour of the plant.

Meder Johnson Joins Sumner Iron Works

Meder Johnson, formerly chief engineer of Rayonier Incorporated, became associated with the Sumner Iron Works, Everett, Wash., Nov. 1, according to announcement by E. I. Flateboe, Sumner president and general manager.

As manager of the Sumner Pulp and Paper Mill Division, Mr. Johnson's experience in the engineering and operating end of the pulp and paper business will augment the long established Sumner background in the designing and building of machinery for their expanding pulp and paper mill trade.

Mr. Johnson started with Rayonier while attending the University of Washington. After obtaining his ME degree in 1934, he became a full-time employee at Port Angeles, and became resident engineer in 1937. During World War II, Mr. Johnson was given the responsibility of organizing and coordinating the efforts of the machine shops at Rayonier's three peninsula's plants and the Crown Zellerbach Corp. plants at Port Angeles and Port Townsend. Later

"Ripco Maid" is the name chosen by Rhinelander Paper Co., Rhinelander, Wis., for their new No. 7 paper machine. This name was submitted by Otto Stark, an employee. Contests for both employees and outsiders was conducted by the company for a name.

This machine—a companion to the "Big Swede"—is now in production, according to Folke Becker, company president.

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The answer to your question of what pumps to use in your pulp and paper mill is here, in Ingersoll-Rand's bulletin No. 7022. It covers both horizontal and vertical pumps for all your needs. Capacities range from 5 to 75,000 GPM and heads to 3100 ft.

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PORLTAND, OREGON



AT ATLANTA CITY MEETING

Top (left to right), LARRY BIDWELL, JR., of Riegel Paper Corp., elected chairman of the group for 1949; HARRY HULMES, Williams-Gray Co., and RAY WILCOX, who were co-masters of ceremony at the annual banquet. Bottom, DOUGLAS SUTHERLAND, Sutherland Refiner; CHARLES VICKERY, E. D. Jones & Sons; GLEN RENEGAR, National Container Corp., who chairmanned the morning business meeting.



PARTICIPANTS at the Atlanta City Supts' meeting: Top—MRS. ALICE DOW, secretary of the group, and J. BERTWELL WHITE, recently retired after 56 years in the industry. Bottom—D. A. WORRELL, General Electric, and MILTON BIXBY, Director of Sales, Hercules Powder Co., were interested spectators.

Superintendents of the lively Pennsylvania-New Jersey-Delaware division gathered October 1st and 2nd at the Ambassador Hotel, Atlantic City.

Lawrence H. Bidwell, Jr., superintendent of the Hughesville mill of Riegel Paper Corp., moved up to the chairmanship of the division. Second in command now is Glen Renegar, superintendent, National Container, Philadelphia; and second vice chairman is H. Drew Stroup, manager, West Virginia Pulp & Paper Company, Williamsburg, Pa.

PULP MARKET AND ECA

(Continued from Page 41)

month. It would appear that there will be something more than enough to supply requirements, but not enough to create a weak market.

The big question mark is formed by the world prospects. It would seem reasonable to suppose that government expenditures for defense and European rehabilitation, and probably rearmament to an appreciable degree, plus unsatisfied demand for heavy consumer and capital goods would result in a high level of general activity.

It should be emphasized that those who see a leveling but healthy condition in the U. S. market do not look for a world buyers' market in wood pulp for some years yet. Barring war, it is generally expected that world pulp requirements will increase at a faster rate than the world supply. Backing this opinion are the facts of possibly a million and half tons of idle paper machine capacity in Western Europe, idle rayon capacity in Germany, Italy and elsewhere, all of which would come into production if pulp is available.

NPTA Address by Tinker

As for the national defense program this was discussed by E. W. Tinker, executive secretary of AP&PA before a recent meeting of the National Paper Trade Association in Chicago. Said Mr. Tinker: "All portents indicate it will be continued on an unprecedented scale. If the year 1949 sees the expenditure of 14 billion or more dollars for national defense, which will be pyramided on top of the multi-billion ECA program, the effect on all business will be large. The paper industry is so interwoven in the national economy that paper and its availability becomes just as much a problem as that of most critical material.

"The industry's past experience with the national defense program, leads to the conclusion that the industry must cooperate with the National Security Resources Board and other governmental agencies involved in the program."

Mylrea Heads Industry Division

John Mylrea has been appointed chief of the Forest Products Division of the National Security Resources Board and other personnel in this division are to be announced as key positions are required. The NSR Board's functions may be described as generally comparable to the function of WPB in World War II. Paper and pulp companies have already been asked to survey their personnel for possible candidates for NSR.

Mr. Tinker, in his address, disputed the contention that pulp and paper is a "feast or famine industry."

"To illustrate," he said, "in 1932, the low year for all industries including the paper industry, the production ratio to capacity for paper was 58%; for steel, 20%. The employment index for the same year (with 1923=100), for paper was 83.5; for all manufactures 60.4. Profits, net after taxes, related to net worth was for

paper, -2%; for all manufactures, -4%. The seasonal variation in employment in the paper and pulp industry is the lowest of the 21 major industries surveyed by the National Industrial Conference Board; the highest variation was in the automobile industry."

To obtain first-hand information on the operations dealing with the foreign fields, a **PULP & PAPER** editor went to Washington to interview ECA officials, the National Resources Board, and the Department of Commerce.

A prominent paper mill executive has been named on the ECA Public Advisory Board by Paul G. Hoffman, ECA administrator. He is George Houk Mead, chairman of Mead Corp., Dayton, Ohio.

Of important interest to the industry is the set-up of the Pulp and Paper Branch, Industry Division. The deputy chief A. McC. Craighead. **PULP & PAPER** conferred with Mr. Craighead on many points carried in this article, but personnel of ECA cannot be quoted directly except through Administrator Hoffman. Mr. Hoffman's office has approved this article, with reference to ECA, as it stands.

NEW AGENCIES OPEN OFFICES IN WASHINGTON

Gradually there are forming up, in the nation's capital, pulp and paper organizations as branches of governmental agencies designed to aid in the Marshall Plan and the broad general defense program. Chief of these are divisions in the National Security Resources Board, and in the Economic Cooperation Administration.

In recent weeks **PULP & PAPER** visited the men who are heading up these divisions and setting down on paper the schematic drawings and broad plans for future operations.

The NSRB has been rapidly organized as a comprehensive planning agency to put our resources into line for quick mobilization should war come, and to assist in mobilizing national resources for the defense program. Under Chairman Arthur Hill are divisions representing every important industry in the country. Heading up the Division of Forest Products of NSRB is John D. Mylrea with long experience (Mosinee, Tomahawk Timber, etc.) in paper, lumber, logging and veneer manufacture. The Division of Forest Products will from time to time call upon executives who handled similar matters during World War II.

While NSRB is a top flight civilian and planning agency, its present status is purely advisory. If war comes, NSRB will undoubtedly become a new WPB. But there is no thought of controls or allocations at present.

As this issue went to press, it was reliably reported that, pending the usual clearance, Mr. Mylrea would appoint Oliver Porter, executive director of U. S. Pulp Producers Association, as head of the Pulp and Paper Branch of the Division of Forest Products. Mr. Porter would take leave of absence from the association

where James H. Ritchie would become acting director. Very soon now Mr. Mylrea will be appointing a head for the lumber division, but his name has not yet been announced. Headquarters of NSRB is in the Old State Building at 17th and Pennsylvania Avenue.

H. E. Whitaker, a production vice president of Mead Corp., is chief of the pulp and paper division, industry division of the Economic Cooperation Administration—but acting for him at present, and doubtless to be associated with him in the work, is A. McCraighead of the Dayton, O., office of Mead. George H. Mead, chairman of the Mead board, is a member of the overall ECA committee, so that the pulp and paper industry is one of the relatively few industries to have a place on that roster. Mr. Mead is there, however, as a representative of all industry.

ECA does no buying or procuring, but is a financing agency which makes available to U. S. dollars for the purchase of commodities needed by the peoples of foreign nations participating in the Marshall Plan. The bulk of such commodities, pulp and paper included, is bought through normal export-import trade channels. Private firms in the U. S. or Europe form contact with private firms abroad, and these European importers then get in touch with their home government agencies and request that ECA funds be allocated to them for the purchase of commodities from their foreign export connections. If the agency approves the requests, applications for such funds are made to the Paris office of ECA which in turn forwards the requests to ECA in Washington.

Mr. Craighead pointed out that although the industry is crowding for fifth place among U. S. industries its business does not loom large in ECA as compared with such commodities as fuel, oil and coal, for example. The pulp and paper division of ECA is in Washington's newest office building at 800 Connecticut Ave., N.W.

PULP & PAPER also visited another new organization which may have to be taken more into account by the industry, although its present work is purely along planning and philosophic lines. This is the Forest Products Division of the Food and Agricultural Organization of United Nations, at 1201 Connecticut. Its purpose is to stimulate and aid governments in primary production of forests and wood products; and "conservation for use."

Frequently the good services of older agencies in Washington are overlooked as the spotlight focuses on emergency bureaus. Such a traditional operation is that of the Forest Products Division of the Office of Domestic Commerce under the direction of W. LeRoy Neubrech who has been with the Department of Commerce for more than 15 years, and whose "Industry Report" has become famous in the industry.

New Machine for Norway

An ECA authorization has been granted to Norway for the expenditure of \$770,000 for a paper machine to be purchased in the United States.

(Continued from Page 88)

the trying experience of building a kraft mill during the war years made it advisable to stabilize operating conditions and postpone further expansion until a more opportune time.

"With the termination of the war our minds were once again directed toward the idea of a second machine and after the decision to proceed was made by the directors, orders were placed for all major equipment which could be obtained only on a long time delivery basis.

"Construction of the second unit, consisting of a 238-inch machine and including all the component mill equipment, an enlarged bleach plant, and two large boilers and turbines, was begun in March 1946. Progress was slow, due principally to late delivery of equipment, and the extension was not completed until March

1948, two years after the start of construction, compared with a 10½ months construction period required to complete the first comparable unit.

"The second machine was brought into production, at about 900 f.p.m., but after a few months of service, the operators were able to bring the machine up to a steady production of 1300 f.p.m. We plan to gradually step it up to at least 1500 f.p.m. after completing some machine adjustments.

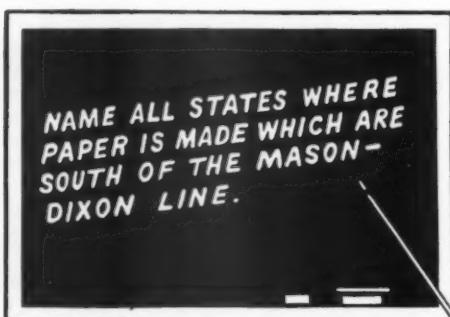
"Further growth of the newsprint industry in the South is being undertaken at Childersburg, Ala., where a two machine mill is now under construction by the Coosa River Newsprint Co. Time alone will tell what additional developments or expansions might be made in this industry to meet the economic conditions and business needs of the South.

Lubrication Discussed

Special attention to selection of lubricant to protect bearings from corrosion, as well as other saving devices to prolong service, was recommended to the superintendents in a paper read by W. B. Shirk, Gulf Oil Corp.'s chief lubrication engineer, prepared with cooperation from J. H. Hooten, Atlanta division engineer. For heavy installations having enclosed reduction gear drives, Mr. Shirk recommended extreme pressure greases; keeping breathers cleaned; and painting drain records on the gear case. Visible and office card index record of service was recommended. Excessive grease in anti-friction bearings on beaters, jordans, etc., is warned against. In the presence of moisture, more frequent checking is necessary. Water repellent lime-soap greases may be required where water may wash the lubricant away. On oil lubricated bearings, an oil level device is recommended.

Where oil circulating systems are used for fully enclosed bearings and mechanisms, it is best to have separate pumps for the gears and the bearings Mr. Shirk said. Temperatures must always be watched for; an 18 degree fluctuation above 140 degrees F. will increase oxidation by fifty per cent. Anti-friction bearings require more care than the old-fashioned type, and the lubricant should also protect against corrosion. For freshly ground rolls, there is a corrosion protecting product available; also one for rolls on the machine for idle periods. The calenders should have an oil circulation separate from the balance of the machine.

What do you know about Paper?



DRAPER'S ATLAS of AMERICAN PAPERMAKING

containing 36 maps of the States where paper is made, together with important facts and figures, answers many interesting questions and shows plant locations.

This forty-four-page book, cloth bound in board, will be mailed free on application to anyone actually engaged in pulp or papermaking. To others, the price is \$2.00 postpaid, while the edition lasts.

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Detroit Diesel Engines Division Has Anniversary

An important milestone in the production and use of Diesel engines was reached recently when manufacture of the 250,000th General Motors series 71 2-cycle Diesel engine was announced by W. T. Crowe, general manager of the Detroit Diesel Engine Division.

The quarter of a million engines produced by this one factory represent an impressive total of over 40,000,000 horsepower; four times the total Diesel horsepower that was in existence in Jan., 1938, when the division first started operations. The figure is estimated by engineers to be sufficient to power 190 ocean going ships comparable to the Queen Elizabeth.

ESCO Catalog Issued

Electric Steel Foundry Co., Portland, Ore., announces publication of its new catalog, No. 168, "Esco Stainless and High Alloy Steels" which shows Esco products in the specialty processing equipment field. Esco is a producer of specialty equipment for the pulp and paper industry. This new catalog will be mailed upon request to Electric Steel Foundry, Co., 2141 N.W. 25th Avenue, Portland 10, Oregon.

A CATALOG RECENTLY completed by Downingtown Mfg. Co., entitled, "Downingtown Cylinder Moulds" (No. 648), is now available. It may be obtained from the company in Downingtown, Pa.

B-F-D DIVISION, Diamond Match Co. has moved from 155 East 44th, to 122 East 42nd Street (Chanin Building) New York City.

E. I. DU PONT DE NEMOURS & CO., INC., was owned by 94,557 different stockholders as of Sept. 30, an increase of 3,573 over the number of holders as of Sept. 30, 1947.

There were 76,980 holders of common stock and 23,674 holders of preferred stock as the third quarter of 1948 ended. These figures include 6,097 holders of more than one kind of stock.

More than 40,000 holders were women, and every state in the Union was represented among Du Pont stockholders.

A NEW BULLETIN issued by the Johnstone Engineering and Machine Co., of Parkersburg, Pa., describes the Johnstone slitter wheel grinder. For this bulletin, No. 848, write to the company.

DECEMBER, 1948

Clark Equipment Wins Legion Citation

Clark Equipment Co. will receive the American Legion's annual citation as the outstanding employer in Michigan for giving "exceptional service in the employment of veterans, both physically able and disabled or handicapped." All four of the Clark plants—Battle Creek, Buchanan, Berrien Springs and Jackson—are covered by the award.

Selection of the Clark Equipment Company as based on the company's program for disabled or handicapped veterans; and was made on recommendation of the Veterans' Employment Representative for Michigan for the U. S. Employment Service.

Marathon Declares Dividends

Directors of Marathon Corp. have declared quarterly dividends on both the common and preferred stock of the company.

The common dividend of 35c a share is payable Nov. 30, 1948, to stockholders of record Nov. 10, 1948. The preferred dividend of \$1.25 a share is payable Jan. 3, 1949, to stockholders of record Dec. 20, 1948. Amounts of both dividends are net after provision for Wisconsin privilege dividend tax.

Changes in Hercules

Dr. Peter Van Wyck, manager of Virginia Cellulose Division, (Hopewell, Va.) of Hercules Powder Company Experiment Station, has been appointed technical assistant to the Hercules director of research. Dr. Richard E. Chaddock, who has been handling technical assistance in this field, now will take over technical assistance on sales development.

Dr. Arthur F. Martin will replace Dr. Van Wyck as manager of the Virginia Cellulose Division.

Packaging Conference

A materials-handling and packaging conference, sponsored by Navy Industrial Assn., has been scheduled for Dec 14, at the U. S. Navy Supply Center, foot of 7th St., Oakland, California.

The event will be similar to one recently held at Bayonne, N. J., with high-ranking navy officials present to outline their ideas on the design of transportation equipment and packaging practices for the benefit of western industrial firms.

FAIRBANKS, MORSE & CO., Chicago, announce that their axial air gap motor is now available as a motor reducer.



This STEBBINS Tank Leads A DOUBLE LIFE...

For example, one 40' diameter Stebbins Semitile Tank is covered with a single span circular slab — supports two deckers, a conveyor and a building over the equipment.

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With extensive experience in Dissolving or Bleached Sulphite Pulp Mill construction and operation. To work on design of new mill to be built in Alaska and operation after completion. Salary open. Submit complete experience record and references with application. Reply Box 23, PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

WANTED

Supervisory position. Eighteen years' experience in top paper mills. For further information write Box 26, PULP & PAPER.

FOR SALE

75" Single Blade Hamblet Sheet Cutter with 8-roll Feed Table, separate Lay-Boy Cutter now at Tacoma, Washington. Reply Box 24, PULP & PAPER, 71 Clumbia Street, Seattle 4, Wash.

WANTED — Pulp Mill Superintendent for northern kraft pulp mill operated by a national concern. Technical training desirable but not necessarily required. Answer giving training and experience, Box 27, PULP & PAPER.

New Office in California For Ross Engineering

To handle expanding business in the Pacific Coast territory the J. O. Ross Engineering Corp. has moved into new and larger offices located in the new Westinghouse Building, 600 St. Paul Ave., Los Angeles 14. R. W. Morsch continues in charge of this new Los Angeles office.

Samuel M. Langston Co. Builds Additions

Samuel M. Langston Co. announce a new two-story building project at Camden, N. J., adding to present structures.

Locker and wash room space is being doubled, and a new machine assembly floor is being built, providing space for additional machine tools. The Langston Co. recently completed an addition to their office and engineering department.

Sprout-Waldron Issues Pulley Bulletin

A 16-page bulletin (P-848) describing the Sprout-Waldron line of Blue Face pulleys and giving new list prices has just come off the press.

Two pages are devoted to the famous Sprout-Waldron Belt-Saver pulley. The back cover shows varied and typical installations of Sprout-Waldron pulleys on the job. Bulletin P-848 and latest discount sheets are available upon request. Write Sprout-Waldron & Co., Muncy, Pa.

American-Marietta Co. Announces Appointment

The American-Marietta Co. has announced appointment of R. E. Pflaumer as vice president in charge of operations in the chemical and resin field, with headquarters in Chicago. Mr. Pflaumer was formerly with Resinous Products & Chemical Co. as sales manager of their industrial adhesives and paper chemicals division.

Mead Publishes Public Relations Survey

"Planning the Modern Municipal Report," published by the Mead Corp., is the outstanding public relations book of the year," according to James P. Taylor, secretary of the Vermont State Chamber of Commerce.

The book is 8½ x 11 inches, 44 pages with many illustrations of town and city reports and covered with plastic binding. These modern, condensed, simply written reports graphically emphasize that the place to start improving government in our country is in the cities and towns. Modernized reports will stimulate interest in local government and convey important information about town affairs and finances to the voters, who in turn can function as active, useful citizens.



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